An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory.

By

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Title: An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory.

Abstract approved:

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Abstract

The purpose of this cross-sectional study was to investigate the frequency of which athletic training students demonstrate behaviors associated with emotional intelligence skills. This study also examined the EI skill demonstration compared to normative sample data, as well as the impact of age, gender, grade point average, and clinical experience hours have on emotional intelligence skills. Emotional intelligence skills were assessed using the Genos Emotional Intelligence Inventory. This study sampled 658 undergraduate and graduate athletic training students enrolled in an accredited professional athletic training program. There was no difference in EI skills between undergraduate and graduate athletic training students. Females demonstrate higher EI skills compared to their male peers. EI skills were inconsistent with normative data, with athletic training students frequently demonstrating lower EI skills compared to the normative data. Athletic training students with more than 500 clinical experience hours demonstrated significantly higher EI skills compared to peers with fewer than 500 hours. Athletic training students demonstrate less EI skills directly associated emotional self-awareness, emotional reasoning, emotional management of others, and interpersonal behaviors. This study was the first to measure how often athletic training students demonstrate behaviors associated with emotional intelligence. The results of this study provide important insight into the emotional and social development of undergraduate and graduate athletic training students. The results of this study also provide educators important data regarding the emotional and social development of their students. These finding indicate that educators and program administrators should consider strategic EI skill development early in the professional development of a student.

Dissertation of Kevin J. Silva

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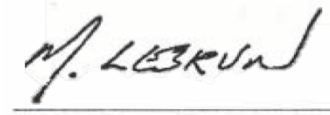

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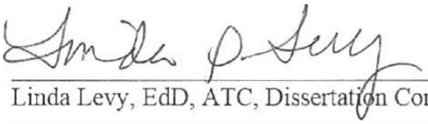

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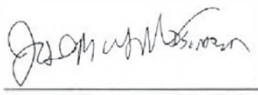

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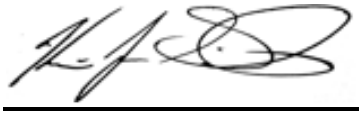

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Executive Summary

Defense Date

March 27th, 2020

Title An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory.

Introduction

Emotional intelligence (EI) is a unique aspect of human intelligence that involves recognizing, understanding, and using emotions to understand, influence, and manage social situations. Millennial and IGen college-aged students experience an emotional and social development delay as they prepare to transition to adulthood. As a result, college-students may not demonstrate behaviors associated with EI compared to previous generations. Healthcare students that demonstrate behaviors associated with EI also demonstrate a higher degree of empathy, interpersonal communication, professionalism, experience less stress, and perform better in academic and clinical settings.

Problem of Practice

Today's college-aged students demonstrate less empathy and social skills, while experiencing higher levels of stress, anxiousness, and focus on self. As a result, athletic training students may not demonstrate the necessary EI skills to navigate the emotional and social burden of delivering patient care.

Research Method

A cross-sectional survey design was used to examine the frequency that athletic training students demonstrate behaviors associated with EI skills using the Genos Emotional Intelligence Inventory. An anonymous online survey was distributed to undergraduate and graduate athletic

training students between the ages of 18-30 who were currently enrolled in an accredited athletic training program.

Summary of Findings

There was no difference in EI skills between undergraduate and graduate athletic training students. Females demonstrate higher EI skills compared to their male peers. EI skills were inconsistent with normative data, with athletic training students frequently demonstrating lower EI skills compared to the normative data. Higher EI skills were found in students with more than 501 clinical experience hours compared to peers with fewer than 500 hours. Athletic training students demonstrate less EI skills directly associated with emotional self-awareness, emotional reasoning, emotional management of others, and interpersonal behaviors.

Limitations of Study

There are inherent limitations with self-reported instruments that may influence the validity and reliability of the results. Although the GEII accounts for these limitations, to fully capture an individual's EI skills a 360-assessment would be required. Due to the sample being limited to athletic training students, the results of this study may not be generalizable to other disciplines.

Implications

This study was the first to measure how often athletic training students demonstrate behaviors associated with emotional intelligence. The results of this study provide important insight into the emotional and social development of undergraduate and graduate athletic training students. Athletic training students demonstrated lower emotional intelligences scores in areas associated with empathy and social interactions. The results of this study also provide educators important data regarding the emotional and social development of their students. Younger

students with less clinical experiences demonstrate fewer EI skills than their peers with more hours. These finding indicate that educators and program administrators should consider strategic EI skill development early in the professional development of a student. The outcomes found on the GEII may serve as benchmarking for educators interested in improving EI skills in their students over time.

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The author would like to express the deepest expressions of gratitude and appreciation to the dissertation committee, Dr. Marcel Lebrun, Dr. Linda Levy, and Dr. Joseph Gallo, for their endless support, guidance, and time throughout the dissertation process. Thank you to Dr. Lebrun for introducing me to the concept of emotional intelligence, encouraging me to explore emotional intelligence in athletic training, and guiding me through the dissertation process; Thank you to Dr. Gallo for is tireless philosophical conversations on the impact of EI research in athletic training and helping see the connection between research and actionable steps in our daily work. Your frequent reminders to keep it simple, laugh a lot and forge ahead, while always helping me see the bigger picture, for that I can't thank you enough; Thank you to Dr. Levy for being the first mentor in my corner, from the fall of 2007 as a freshmen athletic training student you have always guided me and supported me. Your continued support over the last 13 years has played a major role in this achievement and I can't begin to explain the influence you have had on my life. In life, there are few individuals who alter the life path of another person, you have all altered my path in life forever. For that, I sincerely thank all of you.

This dissertation and the years of preceding work was not possible without the endless support from my wife, thank you for the hours of editing, patience, and flexibility that you endured over the last four years. Last but certainly not least, thank you to my parents who always encouraged the pursuit of my academic achievements and pushing me to always strive for the next level.

Dedication

This dissertation is dedicated to my daughter, Emma James Silva, who was born during the time this degree and research was being complete. No work is more important than my love for you. My hope is that you find inspiration in this accomplishment to relentlessly work toward your desires and aspirations. More importantly, as you grow and mature into a strong, independent woman always remember that you can achieve anything, and when you need me I will always be there to support you.

"...I'll be there for you, when the rain starts to pour. I'll be there for you, like I've been there before. I'll be there for you, cause you're there for me too...."

-The Rembrandts

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Social, Cultural, and Historical Perspectives on the Problem

Healthcare students that demonstrate behaviors associated with emotional intelligence (EI) skills demonstrate empathy, interpersonal communication, and professionalism (Arora, Ashrafian, Davis, Athanasiou, Darzi, & Sevdalis, 2010; Cox, 2018). EI skills also help mitigate stress and anxiousness while promoting better academic and clinical performance (Arora et al., 2010; Cox, 2018; Foster, Fethney, Kozlowski, Fois, Reza, & McCloughen, 2018; Por, Barribal, Fitzpatrick, & Roberts, 2011; Swanepoel & Britz, 2017; Weng et al., 2011). The ability to demonstrate behaviors associated with EI skills relies on the emotional self-awareness, awareness of others, expression, reasoning, self-management, positive influence, and relationship management (Gignac, 2010; Goleman, 1995; Palmer, Gignac, Ekerman, &Stough, 2008; Salovey & Mayer, 1990). Over the last two decades, the relationship between EI skills and various facets of workplace behavior, patient care, and healthcare education has continued to grow across disciplines (Fernandez & Extremera, 2006; Plamer, Stough, Hermer, & Gignac, 2010). Various models of EI skills and their assessment instruments have provided the framework for a breadth of empirical data regarding the influence of EI skills in the areas of psychology, leadership, healthcare, business, education, student success, mental health, and physical wellbeing (Goleman, Boyatzis, & McKee, 2013). Individuals that score lower on EI skills assessments tend to experience more stress and anxiousness (Birks, McKendree, & Watt, 2009; Goleman, 2013; Foster et al, 2018). Consequently, deficits in EI skills and the inability to mitigate stress and anxiousness may lead to a higher chance of experiencing burnout directly related to the emotional labor, or the burden of regulating and managing emotions (Foster et al., 2018; Scherer, Zapf, Beitler, & Trumpold, 2019). In the context of healthcare, navigating the emotional and

social situations associated with patient care requires a high level of emotional capital, therefore healthcare providers who lack EI skills have more negative workplace experience due to the emotional burden of patient interactions (Scherer et al., 2019). EI skills have become an important set of fundamental skills related to healthcare competencies, yet are often overlooked during the education of future healthcare professionals (Arora et al., 2010).

Athletic trainers (AT) are healthcare professionals who undergo extensive post-secondary didactic and clinical experiences in primary care, injury and illness prevention, wellness promotion and education, emergency care, examination and clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions (CAATE, 2019). As healthcare professionals, ATs must demonstrate professionalism and render competent patient-centered care, therefore may benefit from fundamental EI skill development (Arora et al., 2010; Birks & Watt, 2007). Athletic trainers provide a wide breadth and scoop of direct patient care in a variety of clinical settings that demand emotional labor. In order to navigate the emotional demands of patient care, cope with stress, and avoid burnout, ATs must demonstrate behaviors associated with EI skills in order to productively respond to emotional situations.

The ability of college-aged students to inherently demonstrate behaviors associated with EI skills is becoming less common across higher education (Konrath, O'Brien, & Hang, 2011; Zarins & Konrath, 2016). Since 1990, a cultural shift has influenced the emotional and social development of college-aged students, creating new challenges for both students and educators in terms of preparing the next generation of healthcare professionals (Twenge & Park, 2019). The college-aged student entering an undergraduate or graduate athletic training program may not have the fundamental EI skills needed to successfully navigate the emotional demands associated with patient care.

Emotional and social development of American youth.

Since the early 1990s, the emotional and social development in American adolescents has steadily declined (Twenge & Park, 2019; Twenge, 2019; Twenge, Spitzberg, & Campbell, 2019). Adolescences is described as the developmental period between childhood and adulthood, specifically early adolescents (11-14 yo), middle adolescents (15-17 yo), and late adolescents (18-21 yo). Behaviors associated with adulthood are occurring at a later age compared to previous generational development indicating a delay in adolescent development.

Americans born between 1980-1994 (*Millennials)* and 1995-2012 (*iGens),* progressed through their formative adolescent years during a major cultural shift (Twenge & Park, 2019). Dramatic changes in technology, social media, parental investment, and life expectancy contribute to the apparent generational delay in transitioning to adulthood (Twenge & Park, 2019; Twenge, 2019; Twenge, Spitzberg, & Campbell, 2019; Twenge, Martin, & Campbell, 2018). Developmental differences between generations are unique to the cultural time period of the adolescent years; these differences are identifiable through the analysis of data collected annually in the United States (Campbell, Siedor, & Twenge, 2015). Due to this delay in emotional and social development, college-aged students today resemble late adolescents from previous generations (Twenge & Park, 2019). The emotional and social developmental delay of the Millennial and iGen generations makes today's college-aged population different than previous generations. As a biproduct of delayed adolescent, college-aged students demonstrate less empathy and compassion (Konrath, O'Brien, & Hang, 2011; Zarins & Konrath, 2016). Empathy and compassion are key elements of delivering competent patient-centered care (Arora et al., 2011; Birks & Watt, 2007). The absence of emotional and social maturation presents a new

challenge for healthcare educators, as curriculum will need to include instruction and assessment in EI skills (Cherry, Fletcher, O'Sullivan, & Dornan, 2014).

Individuals born into the Millennial and iGen generations are less likely to demonstrate common behaviors associated with adulthood by the time they enter college age for reasons observed in a broad cultural shift over the last two decades (Twenge & Park, 2019). Generational differences are normal and typically defined by contextual environment and cultural factors present during their respective adolescent years (Twenge & Park, 2019). Specific influences on recent generations of adolescents associated with technology, social media usage, and parental investment has contributed to the delay in emotional and social development broadly observed across these age-groups (Anderson & Jiang, 2018; Kouros et al., 2017; Smokowski, Bacallao, Cotter, & Evans, 2015; Twenge & Park, 2019).

Individuals born into the Millennial and iGen generational cohorts use technology (eg, smartphones, computers, wearable technology, etc) and social media more than any previous generation (Anderson & Jiang, 2018). In today's society, 95% of adolescents have access to a smartphone device with over 70% using social media daily (Anderson & Jiang, 2018). The influence of technology, social media, and parenting have manifested a cultural shift during the formative years and has directly contributed to the emotional and social developmental delay observed in recent generational cohorts (Twenge & Park, 2019; Twenge, 2019; Twenge, Spitzberg, & Campbell, 2019; Twenge & Martin, 2018). Today's late adolescence (18-21 yo) have the emotional and social maturity of a middle adolescent (15-17 yo) (Twenge & Park, 2019).

Recent generations have experienced greater parental investment over the last two decades, which has contributed to extending adolescent development and delayed transition to

adulthood (Twenge & Park, 2019). Increases in parental investment, or the increase in parental oversight during the middle and late adolescent years, can have positive influences on development (Kouros, Pruitt, Ekas, Kiriaki, & Sunderland, 2017). However, since 1990 decreases in average family size and societal emphasis on emotional and physical safety has exacerbated parental involvement to the level commonly referred to as "helicopter parenting" (Kouros et al., 2017; Smokowski, et al., 2015). College-aged students who experienced helicopter parenting styles reported decreased psychological well-being, demonstrated less self-control, and required greater external psychological satisfaction (Cui et al., 2019; Kouros et al., 2017).

Due to a broad cultural shift the emotional and social maturity of college-aged students are equivalent to a high school-aged student of previous generations. The student entering college may not demonstrate the emotional or social skills to competently navigate the nuisances of patient care relationships (Konrath, O'Brien, & Hsing, 2011).

Connection to healthcare education.

College-aged students entering undergraduate and graduate healthcare education programs possess fewer emotional and social skills compared to previous generational cohorts (Konrath, O'Brien, & Hsing, 2011; Twenge & Park, 2019). Due to the delay in emotional and social development, current and future healthcare students may require strategic development of behaviors associated with emotional intelligence skills. Many healthcare education programs, including athletic training, have adopted the Accreditation Council for Graduate Medical Education's (ACGME) and the Institute of Medicine's (IOM) Healthcare Core Competencies (Arora et al., 2010; ACGME, 2017; CAATE, 2019; IOM, 2003). Patient-centered care, professionalism, interpersonal skills, communication skills, empathy, teamwork, and

collaboration are included as healthcare core competencies (ACGME, 2019; IOM, 2003). EI skills are the fundamental abilities that support an individual's ability to demonstrate competency in these areas of patient care (Cox, 2018; Victoroff & Boyatzis, 2012). Current and future healthcare students may require strategic EI skill development before entering a clinical setting and before transitioning to autonomous clinical practice (Arora et al., 2010; Cherry et al., 2014; Cox, 2018).

College-aged students report high level of stress and anxiety directly correlated with academic experiences (APA, 2018; Foster et al., 2018; Ranasinghe et al., 2017). In a study conducted by the American Psychology Association (2018), 77% of individuals ages 15-21 reported that academics and work were a direct source of stress (APA, 2018). Furthermore, healthcare students experience higher levels of stress than non-healthcare peers (Bertlett et al., 2016; Foster et al., 2018). While completing their responsibilities as healthcare students, 65% of athletic training students report experiencing stress associated with their education (Barrett, Taylor, & Nelson, 2016). Due to the lag in adolescent development to adulthood, the college-aged healthcare student today may have more difficulty coping with the stresses and anxiousness compared to previous generations (Twenge & Park, 2019).

Healthcare students experience higher levels of stress and anxiousness compared to non-healthcare peers, which can negatively impact their academic and clinical performance (Birks, McKendree, & Watt, 2009; Bartlett, Taylor & Nelson, 2016; Beauvais, Brady, O'Shea, & Griffin, 2011; Foster et al., 2018; Ranasinghe et al., 2017). Healthcare education programs are emotionally and physically demanding in regards to time, fatigue, life challenges, financial implication, academic rigor, acquisition of clinical skills, and patient care (Birks et al., 2009; Foster et al., 2018; Pau & Croucher, 2003). Healthcare students that more frequently demonstrate

behaviors associated with EI skills cope and recover from stress better than those with lower EI skills (Arora et al., 2011; Birks et al., 2009; Foster et al., 2018). Likewise, healthcare students with higher EI scores perform better academically and clinically (Arora et al., 2011; Cherry et al., 2014; Ranasinghe et al., 2017). Lower EI scores are associated with reactive decision-making, inability to demonstrate empathy, and poor interpersonal communication, all of which can negatively impact clinical performance and patient care (Gignac, 2010; Por, Barribal, Fitzpatrick, & Roberts, 2011; Swanepoel & Britz, 2017). The inability to consistently demonstrate behaviors associated with EI skills has created a new challenge in healthcare education.

Connection to healthcare practice.

The effectiveness of a healthcare professional is measured beyond intellectual ability and patient outcomes. A healthcare professional's "bed-side manner", which is defined as possessing and demonstrating qualities that foster a positive patient care experience, is the source of 40-60% of negative comments on patient satisfaction survey (López, Detz, Ratanawongsa, & Sarkar, 2012). These qualities are described as the ability to demonstrate communication, empathy, friendliness, trustworthiness, and interpersonal skills (López, Detz, Ratanawongsa, & Sarkar, 2012). These qualities help build resonance with patients and aid in the development of a positive experience, and are directly linked to the ability of the healthcare professional to demonstrate behaviors commonly associated with emotional intelligence skills (Aroa et al, 2010). Although there are factors independent of behaviors associated with EI skills that may impact the patient experience, the perceptions of poor bed-side manner elicit negative patient satisfaction ratings (Anderson, Barbara, & Feldman, 2007; Claxito, Chiao, Durr, & Jiang, 2018).

Healthcare students who transition to clinical practice with emotional intelligence skills will be more likely to demonstrate these behaviors during patient care (Cox, 2018).

Local Contextual Perspectives on the Problem

Athletic trainers are healthcare professionals recognized by the American Medical Association (AMA, 1998). The professional preparation of athletic trainers has transitioned the entry-level degree from the undergraduate to graduate level (CAATE, 2019). The degree change will better align athletic training education with peer healthcare professions at the graduate level (CAATE, 2019). Based the new accreditation standards for professional athletic training programs at the graduate level, each program is required to provide evidence that students demonstrate the core healthcare competencies as outline by the Institution of Medicine (IOM) (CAATE, 2019; IOM, 2003). Likewise, post-professional and residency AT programs are required to demonstrate that student meet minimum competency in the six healthcare core competencies outlined by the Accreditation Council for Graduate Medical Education (ACGME) (ACGME, 2018). Both the IOM and ACGME healthcare core competencies are outlined in Table 1. Behaviors associated with EI skills are directly related to the Healthcare core competencies (Arora et al., 2010). The profession of athletic training has yet to examine the presence or influence of EI skills in students or clinicians.

Table 1

Healthcare Core Competencies

Institute of Medicine (IOM, 2003)	Accreditation Council for Graduate Medical Education (ACGME, 2018)
1. Patient-Centered Care*	1. Medical Knowledge
2. Interdisciplinary Practice*	2. Communication and Interpersonal Skills*
3. Evidence-Based Practice*	3. Patient Care*
4. Quality Improvement*	4. Practice-based learning and improvement*
5. Healthcare Informatics	5. Professionalism*
	6. System-based practice

*Core competencies supported by EI skills.

Note. This table displays the Institute of Medicine and Accreditation Council for Graduate Medical Education healthcare core competencies for healthcare professionals.

The current population of college-aged students entering AT programs require more support, instruction, and development in emotional and social aspects of healthcare than previous generations (Crutcher, Moran, & Covassin, 2018; Twenge & Park, 2019). Research evidence indicates that athletic training students experience frustration, stress, and anxiety directly from clinical and academic experiences (Barrett, Mazerolle, & Eason, 2016; Birks, 2009; Bullock et al., 2017; Heinrichs et al., 2014). Evidence from peer healthcare professions indicates that EI skills may support the students in coping with stress and anxiousness, while improving academic and clinical performance (Cox, 2018; Foster et al., 2018; Ranasinghe et al., 2017). Emotional intelligence skills have been theorized to be associated with the successful acquisition of the core healthcare competencies (Arora et al., 2010; Foster et al., 2018). However, the currently available empirical studies fail to provide evidence of EI skills in AT students.

Leadership Perspectives on the Problem

Since Salovey and Mayer (1990) introduced the first theoretical framework for EI, several variations have been developed specifically to improve leadership competence and workplace behavior (Bar-On, 2006; Gignac, 2010; Extremera & Fernández-Berrocal, 2006; Joseph & Newman, 2010; Miners, Côté, & Lievens, 2018; Salovey & Mayer, 1990; Mayer et al., 2016). The Goleman Model of EI and the Genos Model of EI provide practical frameworks for the application of EI skills to improve leadership and performance (Goleman, 2013; Gignac, 2010). The first theoretical framework for emotional intelligence leadership was introduced by Danial Goleman and focused the practical application of emotional intelligence skills in leadership (Goleman, 1995; Goleman & Boyatzis, 2008; Goleman, 2013). Goleman, Boyatzis, and McKee (2013) further expanded the application of EI skills as a vehicle for improving leadership competence in a variety of workplace environments and situations (Goleman, Boyatzis, & McKee, 2013). The Genos Model of EI was developed based on both of the aforementioned models to provide a framework for improving workplace behaviors (Palmer, Stough, Harmer, & Gignac, 2009).

The EI leadership model relies on the application of EI skills to effectively build and maintain relationships with the members of a team (Goleman, 2013). It is important to note that the term, “leadership” within the context of this model is not referring to positional or hierarchical leadership roles (Goleman, 2013). Rather, leadership may come from any individual within an organization who is able to build resonance with the people they work with and effectively influence positive change through the management of emotions in themselves and others (Goleman, 2013). Leadership competencies are associated with one of four EI factors, including self-awareness, self-management, social awareness, and relationship management

(Goleman, 2013). The Genos Model of EI has three additional factors and was developed to describe, categorize, and assess if an individual demonstrates productive workplace behaviors associated with EI skills regardless of leadership level (Palmer, 2007). The Genos Model of EI contains seven interrelated skills; emotional self-awareness, expression, awareness of others, reasoning, self-management, management of others, and self-control (Gignac, 2010; Palmer, 2007). The Genos Model provides a framework to understand, identify, teach, assess, and improve behaviors associated with productive leadership (Kozlowski, Hutchinson, Hurley, & Browne, 2018). The Genos Model of EI has been successfully applied to measure EI skills in healthcare disciplines (Foster et al., 2018).

Across the breadth of healthcare, clinicians who demonstrate behaviors associated with EI skills are more likely to be perceived as effective leaders (Cox, 2018; Harper, 2016; Hiaght et al., 2017; Nightingale et al., 2018; Osborne, 2012). Leaders who demonstrate high levels of EI tend to work better with others, communicate more effectively, and experience greater job satisfaction (Weng et al., 2011). EI skills can be taught, learned, and improved if clinicians integrate EI leadership training into their professional and post-professional development (Akerjordet & Severinsson, 2010; Kozlowski, Hutchinson, Hurley, Browne, 2018). Empirical research indicates a correlation between EI skills and leadership effectiveness, therefore healthcare professionals who demonstrate unproductive behaviors associated with EI skills are less likely to demonstrate productive leadership competencies (Harper, 2016).

Specific Problem of Practice

Due to a delay in emotional and social development of individuals born into the Millennials and IGen cohorts, college-aged students demonstrate less empathy and social skills, while experiencing higher levels of stress, anxiousness, and narcissism. As a result, professional, post-professional, and residency athletic training students may not possess the necessary EI skills to navigate the emotional and social burden of delivering competent patient care.

Athletic training education is an academically and clinically rigorous healthcare program that requires high level of emotional maturity, empathy, communication skills, and interpersonal skills, which are all behaviors fundamentally supported by EI skills (Arora et al., 2010; Palmer et al., 2008). The current generation of college-aged individuals are different than any previous generation due to an expansive cultural shift that took place during their adolescent development (Twnege & Park, 2019). The rate of emotional and social development of Millennial and iGen generational cohorts have steadily declined, indicating a delay in behaviors associated with adulthood. A college-aged student today has the emotional and social maturity of a high school student from previous generational cohorts. As a result, students today experience more stress and anxiety, and have become more focus on self, have less social connection, and have difficulty demonstrating empathy (Grubbs et al., 2019; Konrath, O'Brien, & Hsing, 2011; Zarins & Konrath, 2016; Twenge & Martin, 2018; Twnege, Spitzberg, & Campbell, 2019). The aforementioned delay in emotional and social development can be observed through the behaviors associated with emotional intelligence skills. Like other healthcare programs, athletic training education adopted the healthcare core competencies to ensure students deliver patient-centered care with professionalism, empathy, and interpersonal skills. Currently, there is no

research that has examined if athletic training students demonstrate behaviors associated with EI skills.

Research Question #1

Do professional level athletic training students demonstrate behaviors associated with emotional intelligence skills based on the Genos Emotional Intelligence Inventory?

Research Question #2

Is there a difference in EI scores between athletic training students and the Genos normative sample data?

Research Question #3

Is there a difference between intrapersonal EI scores and interpersonal EI score in athletic training students?

Chapter Summary

Emotional intelligence (EI) is a unique aspect of human intelligence that involves recognizing, understanding, and using emotions to understand, influence, and manage social situations. Millennial and IGen college-aged students experience an emotional and social development delay as they prepare to transition to adulthood. As a result, college-students may not demonstrate behaviors associated with EI compared to previous generations. Healthcare students that demonstrate behaviors associated with EI also demonstrate a higher degree of empathy, interpersonal communication, professionalism, experience less stress, and perform better in academic and clinical settings. Today's college-aged students demonstrate less empathy and social skills, while experiencing higher levels of stress, anxiousness, and focus on self. As a result, athletic training students may not demonstrate the necessary EI skills to navigate the emotional and social burden of delivering patient care.

Chapter 2: Review of Knowledge for Action

The aim of this chapter is to provide a review of the available literature regarding the theoretical and conceptual framework for the problem of practice. Furthermore, a review of available empirical literature will be presented to highlight the lack of evidence to support the problem of practice within the discipline of athletic training. This review of the available literature will discuss the influence of Life History Theory and Emotional Intelligence Theory on healthcare student's ability to demonstrate empathy, behaviors associated with core competencies of healthcare, and academic and clinical performance.

Review Strategy

A comprehensive search for peer-reviewed literature was conducted using Academic Search Premier, MEDLINE, CINAHL, PubMed, and PsycINFO accessed through Plymouth State University. Boolean search criteria was implemented to focus search results into ten search categories, including (1) models of emotional intelligence, (2) emotional intelligence and healthcare competencies, (3) life history theory and emotional development, (4) emotional intelligence and healthcare students, (5) healthcare student and anxiety and stress, (6) emotional intelligence and nursing education, (7) emotional intelligence and medical school education, (8) emotional intelligence and academic performance, (9) emotional intelligence and clinical performance, and (10) emotional intelligence and athletic training. A vast breadth and scope of theoretical and empirical literature on EI has been published over the last three decades.

Several themes are consistently identifiable across the available literature. A positive relationship between EI skills and productive human behaviors, decision-making, and performance is consistent throughout the literature (Arora et al, 2010; Mayer et al., 2016). The influence of EI skills in healthcare education was a clear theme in the available medical

education literature. The correlation between EI skills and stress, anxiety, academic performance, clinical performance, communication, and leadership were common themes that emerged within the disciplines of nursing, occupational therapy, physical therapy, medical education, dental education, and healthcare leadership (Arora et al., 2010; Arora et al., 2011; Foster et al., 2018; Ranasinghe et al., 2017; Swanepoel & Britz, 2017). Despite the available literature from similar healthcare professions, there are no empirical studies that have examined if athletic training students demonstrate behaviors associated with EI skills.

Life History Theory

Charles Darwin (1859) established the theoretical framework that explained the influence of resources on a species sexual, psychological, and social development (Buss, 2009; Darwin, 1859). Changes to a particular species' environment, resources, or interspecies relationships have a direct influence in the psychological development (Buss, 2009). Darwin's original theoretical framework failed to explain the influence of genetics, intrinsic, and extrinsic factors on human's in a modern society (Stern, 2000). Throughout the 20th century the scientific community examined the influence of inheritance, genetics, and resource has on modern human development (Stern, 2000). As a result, the life history theory was developed to categorize and predict how environment and resources influence the rate of human maturation and development.

Life history theory is an evolutionary ecological, neurobiological, and sociological theory developed to categorize the influence of resource allocation on a particular species survival (Figueredo et al., 2006). Sterns (1992) described life history theory as the strategic allocation of resources to obtain either a somatic or reproductive effect (Sterns, 1992). A somatic effect results from resource allocation for self-improvement strategies, while reproductive effect allocates resources to accelerating maturation to immediate reproductive success (Mittal & Griskevicius,

2014). Life history theory can predict an individual's or group's behavior based on the resources and environment encountered during adolescent years (Twenge & Park, 2019). Empirical research has used life history to explain the correlation between resources during adolescence and the rate of maturation, cognitive development, lifespan, population growth, and social development (Mittal & Griskevicius, 2014). In today's society, the life history theory is used to explain changes in adolescent development rates.

The life history theory is used to describes emotional and social development based on the rate at which an individual or group reaches adulthood (Twenge & Park, 2019). Intrinsic and extrinsic factors related to culture, socioeconomic status, and family structure during adolescent years (11-21 years of age), directly influences a faster or slower transition to adulthood (Twenge & Park, 2019). A resource-limited environment and lower parental investment tends to result in a faster transition to behaviors associated with adulthood, which can be classified as the reproductive effect. Likewise, an adolescent development in a resource-rich environment with high parental investment will experience a delay in transition to adulthood, or a somatic effect. A faster transition to adulthood results in earlier onset of high-risk behaviors, early reproduction, and shorter lifespan. While a slower transition to adulthood results in a delay in behaviors associated with independence, later reproduction, and fewer offspring. Cultural changes, socioeconomical status, and environment can influence the rate of development both generational and individually (Twenge & Park, 2019). Life history theory provides a framework for examining how culture and resources influence the adolescent development in an industrialized, recourse-rich environment. The Millennial and iGen generations are the focus of current research in life history theory.

Connection to Problem of Practice

The influence of technology, social media, and helicopter parenting have manifested in a cultural shift during the formative years and has directly contributed to the emotional and social developmental delay observed in recent generational cohorts (Twenge & Park, 2019; Twenge, 2019; Twenge, Spitzberg, & Campbell, 2019; Twenge & Martin, 2018). Today's late adolescence (18-21 yo) have the emotional and social maturity as that of a middle adolescent (15-17 yo) (Twenge & Park, 2019). Due to a broad cultural shift the emotional and social maturity of the freshman college student today is equivalent to a freshman in high school in previous generations. The student entering college may not demonstrate the emotional or social skills to competently navigate the nuisances of patient and interprofessional relationships (Twenge & Park, 2019; Twenge, 2019; Konrath, O'Brien, & Hsing, 2011). As a direct result of delayed adolescences, college-aged students entering healthcare education programs may also demonstrate a delay development of emotional intelligence.

The development of emotional and social skill sets is influenced by sociodemographic factors appreciated during adolescents (Haralur, Majeedm Afzal, & Chaturvedi, 2019). In a 2019 study, researchers examined the relationship between EI skills and sociodemographic factors that were experienced during their adolescent development. The researchers performed a cross-sectional research design study of 113 dental students from five international geographical locations. The results indicated that sociodemographic factors, such as growing up with siblings, relationship with parents, and parent education level, are positively correlated with EI scores (Haralur, Majeedm Afzal, & Chaturvedi, 2019). These findings further support the life history theory in explaining the influence of adolescent factors on the development of EI skills in healthcare professionals.

Emotional Intelligence Theory

Emotional intelligence (EI) is a relatively new phenomenon that has received attention from researchers over the last three decades (Bar-On, 1997; Bar-On, 2006; Fambrough & Hart, 2008; Miners, Côté, & Lievens, 2018; Salovey & Mayer, 1990). The term EI was first coined by Salovey and Mayer (1990) in an effort to better define the aspect of human intelligence that involves recognizing, understanding, and using emotions to manage social situations (Salovery & Mayer, 1990). Although EI theory became popularized throughout the 1990s, the theoretical concepts that Salovey and Mayer built upon date back to early accounts of human interactions and social psychology theory. In healthcare, an individual's ability to consistently demonstrate behaviors associated with EI skills, is favorably correlated with academic performance, clinical competency, interprofessional communication, job satisfaction, absenteeism, leadership, stress, anxiety, burnout, and overall well-being (Arora, et al., 2010; Haight et al., 2017; Freshman & Rubino, 2002; Por, Barriball, Fitzpatrick, & Roberts, 2011; Ranasinghe et al., 2017). In order to understand the theoretical framework of EI, the concept of emotion must be defined using the psychology literature as it is critical to understanding the factors and behaviors that make up EI. EI skills are often inaccurately referred to as "soft skills" in order to deemphasize their importance. Conversely, the neurobiology of processing, regulating, and expressing emotions is a complex process that drives all aspects of an individual's performance, decision-making, and behavior (Goleman, 2013; Lieberman, 2013; Plamer et al., 2009).

Understanding Emotion

Although, the terms mood and emotion are often used interchangeably, the terms have different contextual definitions related to emotional intelligence (Buck, 1990; Hofmann & Doan, 2018; Salovey & Mayer, 1990). Emotion is considered the psychological, cognitive, biological, or experiential response to internal or external stimuli that have either a positive or negative impact on behavior (Buck, 1990; Salovey & Mayer, 1990). Compared to mood, emotions are shorter and more intense neurobiological responses to an internal or external event capable of producing changes in human behavior (Goleman, 1995; Goleman, Boyatzis, & McKee, 2013; Salovey & Mayer, 1990; Lieberman, 2013). Emotions can be positive (e.g. joy, excitement, pleasure), however emotions are often categorized as negative (e.g. anger, anxiousness, frustration) mental response that results in an unproductive deviation in cognitive processes (Salovey & Mayer, 1990). A more contemporary perception of emotions has been described as a powerful mental process, that if embraced and practiced, can result in highly motivating factors that contribute to desirable human behaviors (Salovey & Mayer, 1990; Mayer et al., 2016; Gignac, 2010). For the purposes of this paper, emotions are the multidimensional neurobiological response to an internal or external arousal, which is often associated with previous learned experiences (Hofmann & Doan, 2018). Emotions can be regulated and manipulated to drive human decisions, behaviors, and performance through inter- and intrapersonal processes (Hofmann & Doan, 2018; Plamer, Gignac, Ekerman, & Stough, 2008). The role of emotions in human behavior led social psychologists to developed theoretical constructs to better explain how emotions impact human behavior.

Neurobiology of human emotions

The neurobiology of emotions provides further scientific evidence to support the influence emotions have on human behavior. A distinguishing feature of the human species is their inherent interdependence on each other for emotional and social support (Goleman, 2013; Lieberman, 2013). The human brain is hardwired to recognize and understand emotions within the context of social connectedness (Bar-On, Tranel, Denburg, & Bechara, 2003; Lieberman, 2013). From a primitive stand point, the human brain was designed to rapidly process external and internal stimuli, often referred to as the "fight or flight" mechanism. In terms of survival, the brain developed a special circuit to quickly process and respond to dangerous or unexpected stimuli. Within the neural pathways of the human brain, the limbic system is responsible processing internal and external emotional information through communication between the hippocampus, thalamus, and the amygdala (Joseph, 1992). The hippocampus is responsible for processing memory and interpreting emotions. The thalamus is responsible for relaying sensory information to the rest of the brain (Joseph, 1992). The amygdala serves as the emotional processing center and stimulates the release of adrenalin and cortisol (Joseph, 1992). Together these organs continuously work together to recognize, interpret, regulate, and use emotional information gathered from visual, auditory, and other sensory stimuli.

In primitive humans, the amygdala's ability to rapidly interpret stimuli was a key aspect of survival. In response to a potentially dangerous stimuli, the amygdala signals the excretion of adrenaline and cortisol (Goleman, 2013; Lederer, 2019). The release of adrenaline and cortisol stimulates an increase in heart rate, blood pressure, and respiration, which in turn increases the systemic distribution of blood, sugar, and oxygen preparing the body for "fight or flight" (Esler, 2017; Goleman, 2013). Along with physical response to stimuli, this response turns off

neurocognitive decision-making centers in the brain to allow for faster reaction times to either "fight or flight". In 21st century society, humans are forced to process more external stimuli than any previous generation. As a result, amygdala function has become hyper-sensitive which has lowered the threshold for adrenaline and cortisol excretions. When a true "fight or flight" response is not warranted, an increase adrenaline and cortisol response manifests in higher levels of stress and anxiousness (Goleman, 2013). Once the amygdala has been hijacked by hyper-sensitivity to everyday stimuli, relatively benign stimuli triggers a reactive response leaving the brain unable to utilize reasoning, logic, or rationalization to process emotions. This results in a stress or anxious response leading to reactive, unproductive behavior, decisions, and performance (Goleman, 2013, Palmer et al., 2009).

As humans emotional and social experiences develop and become stored as memories, the limbic system develops into a powerful processing unit for emotional information. Through these experiences, the human limbic system is able to read emotional and social thoughts in another human solely based of non-verbal and situational cues (Lieberman, 2013). Making the human brain an inherently powerful mind reader, however the ability to identify and accurately interpret emotional information various person to person (Lieberman, 2013; Mayer et al., 2016). The limbic system is an open loop which processes internal and external stimuli to connect with other humans (Goleman, 2013). Each human limbic system is different and is able to connect with other limbic systems through emotional and social pathways. The limbic system is more likely to connect with a positive productive human emotion, i.e. laughter or happiness, when compared to an unproductive human behavior, i.e. anxiety, stress, or depression (Goleman, 2013). Based on the open loop concept, limbic systems of similar neurobiological makeup are able to connect easily, whereas opposites will have a more difficult time connecting (Goleman,

2013). Neurobiology research using functional magnetic resonance imaging (fMRI), which uses a magnetic field to capture real-time brain activity, has provided insight into emotional and social connection of the human brain (Goleman & Boyatzis, 2008; Lieberman, 2013). Functional MRI research has provided evidence to support the theoretical concepts of EI and demonstrates the importance of social human connection through powerful neurobiological pathways in the human brain (Goleman & Boyatzis, 2008; Lieberman, 2013).

Origins of Emotional Intelligence Theory

The role that emotions play in human intelligence has been an area of controversy for thousands of years, dating back to Ancient Greek philosophers who argued that logic supersedes feelings (Mayer, Roberts, & Barsade, 2008). Darwin (1872), Thorndike (1920), and Gardner's (1983) contributions to the areas of understanding human emotion and multiple intelligences, are commonly cited as the fundamental concepts that lead to the development of EI theory (Bar-On et al., 2003; Goleman & Boyatzis, 2008; Thorndike, 1920; Salovey & Mayer, 1990). Charles Darwin (1872) published the first research on the role of emotions, expression, and regulation based on his observations of human and animal development (Darwin, 1872). Darwin is credited with publishing the first scientific research on EI in humans nearly 120 years before Salovey and Mayer's seminal publication (Bar-On, Tranel, Denburg, & Bechara, 2003). The theoretical constructs developed by Thorndike in the 1920s, suggested that the ability to manage the emotions and social interactions was vital to survival and a lack of social skills can negatively impact performance (Bar-On, 2006; Gardner, 1983; Goleman & Boyatzis, 2008; Thorndike, 1920; Thorndike & Stern, 1937; Gignac, 2010; Goleman, 1995; Salovey & Mayer, 1990). Gardner (1983) established the theory that multiple intelligences exist, a theory that set the stage for social psychologists to explore the role emotions have on inherently social human behavior

(Gardner, 1983; Salovey & Mayer, 1990). Gardner (1983) introduced the theory of multiple intelligences, which outlined seven intelligences in humans, including interpersonal and intrapersonal intelligence (Gardner, 1983). Salovey and Mayer (1990) used theoretical constructs from Darwin, Thorndike, and Gardner to develop the first scientific framework for EI (Salovey & Mayer, 1990). EI is a subset of social and personal intelligence that requires the recognition and regulation of emotions in the context of managing behaviors and relationships (Salovey & Mayer, 1990; Mayer et al., 2016; Gignac, 2010). An emotionally intelligent individual demonstrates behaviors that coincide with accurate awareness of emotions, perception of emotions, regulation of emotions, and utilization of emotions to drive behavior, decisions, and performance (Gignac, 2010; Mayer & Salovey, 1995; Mayer et al., 2016,).

A definitive definition of EI has yet been established as five models of EI appear in the literature each with a unique framework (Barchard, Brackett, & Mestre, 2016). EI was originally defined by Salovey & Mayer (1990) as a set of skills related to the appraisal and expressions of one's emotions, the regulation of those emotions in self and others, and the ability to utilize emotions to manage life interactions (Salovey & Mayer, 1990). Although a single definition does not exist, the various models of EI are all derived from Salovey & Mayer's original 1990 theoretical framework. The application of EI to improve behavior, decisions, and performance gained popularity through several empirical studies that showed favorable correlation with leadership traits, job satisfaction, burnout, interpersonal skills, and performance (Palmer et al., 2009; Jackson-Koku & Grime, 2019).

Daniel Goleman's (1995) *Emotional Intelligence* is credited with commercially expanding the breadth, scope, and applicability of EI among psychology, healthcare, management, business, higher education, and leadership disciplines (Bar-On, 2006; Fernández-

Berrocal & Extremera, 2006; Joseph & Newman, 2010; Miners, Côté, & Lievens, 2018). Since the inception of EI, five major models of EI have been demonstrated within the empirical literature (Joseph & Newman, 2010; Miners, Côté, & Lievens, 2018). Based on unique theoretical construct, psychometric philosophy, and intended application, the models of EI can be either abilities-based, trait-based, or a mixed-model.

Ability-Based and Mixed Models of Emotional Intelligence

The rapid development of EI models over the last three decades, and their associated assessment instruments, has led to confusion, criticism, and assessment differences between the EI models (Gignac, 2010; Joseph & Newman, 2010; Pérez, Petrides, & Furnham, 2005). Models of EI are either ability-based or mixed-model (Gignac, 2010; Petrides et al., 2016). The ability-based, or cognitive-emotional ability, models assume an inherent relationship between cognitive abilities and a set of standardized emotional abilities that can be measured through maximal performance instrumentations (Gignac, 2010; Joseph & Newman, 2010; Pérez, Petrides, & Furnham, 2005). Ability-based models assume that an individual can objectively perceive, appraise, and express emotions (Petrides & Furnham, 2001). Whereas, the mixed-model, or emotional self-efficacy, of EI assumes that emotional skills are varied in nature, and therefore are best measured through a self-reported instrument that measures an individual's typical performance of behaviors associated with EI skills (Gignac, 2010; Joseph & Newman, 2010; Petrides, & Furnham 2006; Pérez, Petrides, & Furnham, 2005; Petrides et al., 2016).). Despite EI assessments demonstrating validity and reliability, both ability and mixed-models of EI have been criticized by psychometric researchers for the lack of sufficient validity and reliability (Locke, 2005; Mayer, Salovey, & Caruso, 2002; Mayer, Salovey, & Caruso, 2012; Mayer, Caruso, & Salovey, 2016; Joseph & Newman, 2010). However, the psychometric properties of

some mixed-model EI constructs have been designed to correct reliability and validity flaws previously experienced with abilities-based models (Gignac, 2010).

Models and Measures of Emotional Intelligence

In 1990, Mayer and Salovery introduced psychology to the first theoretical framework of emotional intelligence. Over the next two decades, several other models of EI emerged in the psychology, leadership, business, and management literature (Fernández-Berrocal & Extremera, 2006). Although more than a dozen EI models are available, only four models are supported with sufficient empirical literature by the EI research community (Bar-On, 2006; Fernández-Berrocal & Extremera, 2006; Gignac, 2010; Mayer, 1997; Pérez, Petrides, & Furnham, 2005). The four models included are (1) the EI ability-based model (Salovery & Mayer, 1990; Mayer, 1997), (2) Bar-On's emotional-social intelligence model (Bar-On, 1997), (3) Goleman's model of EI (Goleman, 1995; Goleman, 2013), and (4) the Genos seven-factor model of emotional intelligence (Palmer et al., 2008). Each model has developed a unique EI framework, as well as philosophical and theoretical constructs, which are compared in Table 2. Based on these differences, each model has developed an assessment instrument to measure EI skills related to the factors within the framework, the respective instruments are represented in Table 3. Unlike the other models, the Genos model of EI is the only behavior based model developed on the results of psychometric analysis EI assessment instruments (Gignac, 2010; Palmer et al., 2007).

Table 2

Models of Emotional Intelligence

Name (Citation)	Framework
The EI Ability Model	(1) the perception, appraisal, and expression of emotion
(Salovey & Mayer, 1990)	(2) the emotional facilitation of thinking
	(3) the understanding and analyzing of emotions
	(4) the reflective regulation of emotions
Goleman's Model of EI	(1) self-awareness
(Goleman, 1998)	(2) self-regulation or management
	(3) social awareness
	(4) relationship management
Bar-On Model of Emotional-Social	(1) self-awareness and self-expression
Intelligence	(2) social awareness and interpersonal relationship
(Bar-On, 2006)	(3) emotional management and regulation
	(4) change management
	(5) self-motivation
Genos Model of EI	(1) emotional self-awareness
(Palmer et al., 2009)	(2) emotional expression
	(3) emotional awareness of others
	(4) emotional reasoning
	(5) emotional self-management
	(6) emotional management of others
	(7) emotional self-control

EI = emotional intelligence

Note. This table displays the common models of emotional intelligence supported by empirical research, as well as the factors or competencies that correspond with each model.

Table 3

Emotional Intelligence Assessment Instruments

Name (Citation)	Assessment Instrument	Assessment Approach
The EI Ability Model (Salovey & Mayer, 1990)	Mayer-Salovey-Caruso EI Test	Performance
Goleman's Model of EI (Goleman, 1998)	Emotional Competence Inventory	Competency
Bar-On Model of ES Intelligence (Bar-On, 2006)	Emotional Quotient Inventory	Trait
Genos Model of EI (Palmer et al., 2009)	Genos EI Inventory	Behavioral

Note. This table displays the common emotional intelligence models and the corresponding assessment instruments. Palmer, B. R. (2007). Models and measures of emotional intelligence. Organizations and People,14, 3–10.

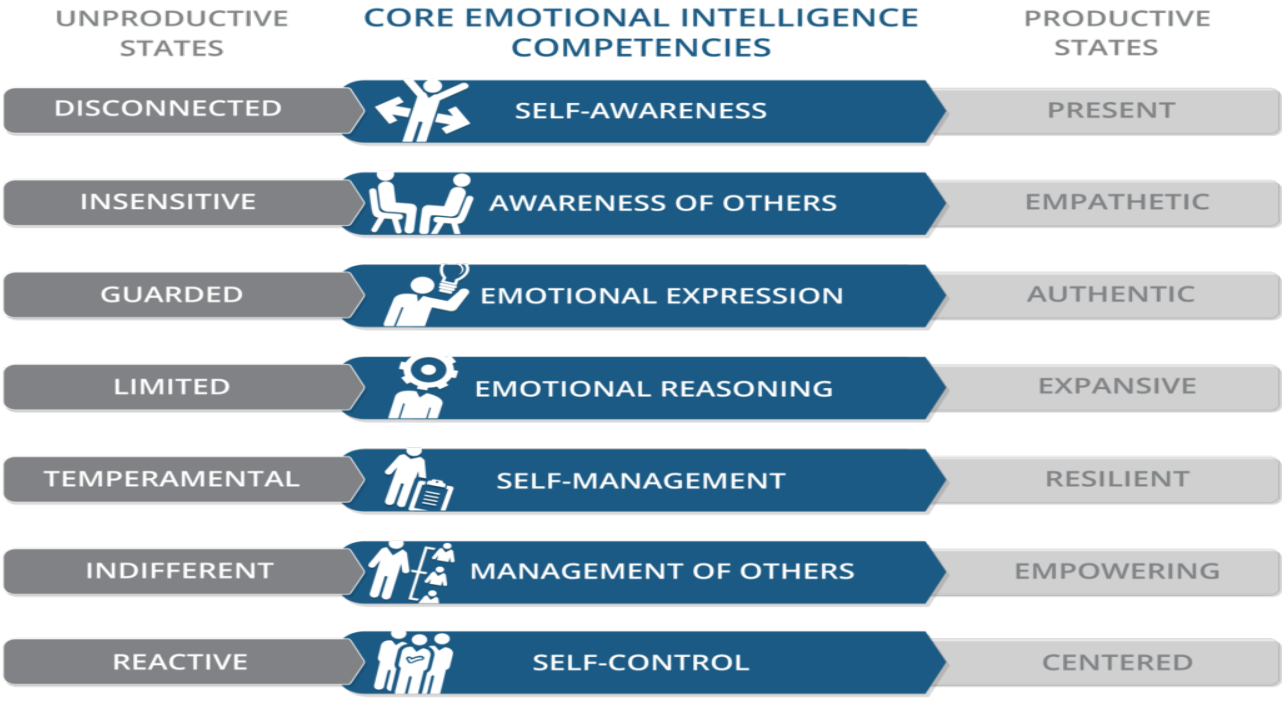
Genos Model of Emotional Intelligence

In 2007, a novel approach to EI assessment was developed based on psychometric analysis of the available abilities-based and mixed models (Palmer, 2007; Palmer et al., 2008; Gignac, 2005; Gignac, 2010). The Genos Model of EI is not an ability or mixed model, rather the model is a unique methodology to assess the frequency to which an induvial demonstrates behaviors associated with the seven EI factor competencies (Palmer et al., 2009; Palmer & Gignac, 2012). The Genos Model of EI was developed based on the results of a multi-study analysis of the previously discussed models of EI and their assessment instruments (Palmer et al., 2009; Palmer & Gignac, 2012). Based on the findings, Benjamin Palmer and his colleagues developed a seven-factor model of EI that was inclusive to the constructs that best correlated with workplace performance (Palmer & Gignac, 2012). The Genos Model of Emotional Intelligence is further outlined in Figure 1. The Genos model of EI contains seven interrelated

factors or competencies associated with EI; (1) emotional self-awareness, (2) emotional expression, (3) emotional awareness of others, (4) emotional reasoning, (5) emotional self-management, (6) emotional management of others, and (7) emotional self-control (Palmer et al., 2009). Each factor is defined within the context of behavior and perception of behavior outlined in Table 4.

Figure 1

Genos Model of Emotional Intelligence (Genos, 2018)



Note. The figure depicts the Genos Model of Emotional Intelligence and each EI factor within the context of unproductive and productive behaviors. The figure is adopted from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

Table 4

Genos Emotional Intelligence - Definition of Factors

EI Factor	Definition
Emotional Self-Awareness (ESA)	Frequency that an individual consciously identifies their own emotions, events that trigger emotions, and how emotions impact behavior in terms of both positive and negative situations.
Emotional Expression (EE)	Frequency that an individual expresses their emotions in the right way, at the right time, and to the right people. Including the verbal and non-verbal expression of emotions in both positive and negative situations.
Emotional Awareness of Others (EAO)	Frequency that an individual identifies the verbal and non-verbal emotions expressed by others, with an emphasis on the origin of positive and negative emotions in expressed by others and how those emotions impact behavior.
Emotional Reasoning (ER)	Frequency that an individual integrates emotional information to demonstrate a balanced approach to problem solving that considers their own emotions and the emotions of others when making decisions at work. Furthermore, the use of emotions to successfully engagement of others.
Emotional Self-Management (ESM)	Frequency that an individual manages their own emotions with emphasis on negative emotional situations through their ability navigate emotional situations with flexibility and agility. Demonstrates ability to proactively manage emotions.
Emotional Management of Others (EMO)	Frequency with which an individual manages emotions of others, success is marked using emotional information and modifying emotions to motivate others, creating a positive working environment for others, or helping others resolve an issue causing emotional distress.
Emotional Self-Control (ESC)	Frequency that an individual control and regulates emotions in both positive and negative and the ability to maintain appropriate behavior, decision-making, and performance during times of emotional adversity. Emphasis is on extreme or intense emotional regulation.

Note. This table outlines the seven emotional intelligence factors of the Genos Model of emotional intelligence. Definitions of EI factors adapted from Genos Emotional Intelligence Inventory Technical Manual (Gignac, 2010).

Genos Emotional Intelligence Inventory

The Genos model of EI is measured using a self-reported instrument that asks the individual to rate how often they demonstrate behaviors associated with the seven EI skills (Palmer et al., 2009). In 2007, the Genos Emotional Intelligence Inventory (GEII) was developed, adapted, and expanded from the Swinburne University Emotional Intelligence Test, a valid and reliable 64-item self-report EI measure (Palmer & Stough, 2001). The GEII has sound psychometric properties and strong validity and reliability supported by empirical research (Gignac, 2010). The Genos model differs from the other models as it is not a cognitive or maximal performance assessment, but assesses typical performance of EI skills through the frequency an individual demonstrates the behaviors associated EI skills (Gignac, 2010). The GEII assess the seven factors previously outlined, each factor is scored individually to provide insight into the individuals typical performance in a given factor. Interpretations for each factor score are outlined in Table 5. The GEII has three validated and reliable options, 70-item long version, 31-item concise version, and a 14-item short version.

Table 5

Genos Emotional Intelligence Inventory High Core Interpretation

EI Factor	Subscale Interpretation
Emotional Self-Awareness	High scores indicate a frequent awareness of one's emotions at work, their causes, as well as the impacts of emotions on one's thoughts, decisions and behavior at work.
Emotional Expression	High scores indicate a frequent demonstration of effective emotional expression at work, such as feelings of happiness, frustration, as well as feedback to colleagues.
Emotional Awareness of Others	High scores indicate a frequent and accurate identification of the emotions of others at work, as well as their causes.
Emotional Reasoning	High scores indicate a frequent consideration of one's own and others' emotions when making decisions at work, as well as expressing that such consideration has taken place.
Emotional Self-Management	High scores indicate a frequent engagement of activities that facilitate the positive development of emotions in oneself, as well as a relative absence of dwelling on negative emotions.
Emotional Management of Others	High scores indicate a frequent engagement in the creation of emotionally positive work environments for others, as well as effectively helping colleagues resolve issues that may be affecting their performance adversely.
Emotional Self-Control	High scores indicate a frequently demonstrated capacity to remain focused when anxious or disappointed at work, as well as the demonstrated ability to not loose one's temper.

Note. This table provides interpretation for high scores when assessing the seven emotional intelligence factors of the Genos Model of emotional intelligence. Definitions of EI factors adapted from Genos Emotional Intelligence Inventory Technical Manual (Gignac, 2010).

Criticism of Emotional Intelligence

Since the inception of emotional intelligence in contemporary literature, the theoretical and empirical literature has been scrutinized across the disciplines. Unlike intellectual abilities, emotional intelligence is not easily defined, demonstrated, and/or assessed and therefore has been devalued by critics (Joseph & Newman, 2010; Locke, 2005; McCleskey, 2014). The EI

abilities and competencies are often labeled “soft-skills” and have historically been discredited and discouraged in the work place (Goleman, 2013). In healthcare, emotions can be viewed as both a positive and a negative. Removing emotions allows clinicians to be objective, however the lack of emotional intelligence skills can make connecting with patients challenging (Cherry et al., 2014; Hiaght et al., 2017). The various models of EI and the respective assessment instruments may be viewed as inherently biased, as they are developed by the authors or creators of the model and are used for revenue generating mediums, which has called into question the validity and reliability of the empirical research (Fambrough & Hart, 2008). The greatest challenge and obstacle facing EI research is the lack of sufficient empirical evidence to support the theoretical claims, as well as, valid measures to assess EI (Fambrough & Hart, 2008). The criticisms surrounding EI are not without merit, however theoretical and empirical literature regarding EI are still in their infancy and will require future research to better establish this evidence (Mayer et al., 2016). The Genos model of EI was specifically designed to account for these criticisms and flaws in psychometric properties of previously popularized models of EI (Palmer, 2007). The 21st century has seen a tremendous increase in empirical studies associated with the influence of EI skills on higher education, leadership, healthcare education, and patient care settings. Despite the few EI critics, research supports the assessment of EI and the application of EI to improve performance, behavior, and decision-making. However, it is important to use the instruments with the appropriate intent and methodology designated by the individual model as the conceptual framework are unique to the model.

Delayed adolescent Emotional-Social Development

Based on the life history theory, as the American culture has become resource-rich in terms of technology, healthcare, and social networks, combined with an increase in parental investment, adolescent development toward adulthood steadily slowed (Twenge & Park, 2019). Adolescences is the transitional decade between childhood and adulthood, in which a child undergoes physical, emotional, and social maturation in an effort to gain independence (Twenge & Park, 2019). Twenge and Park categorized adolescent development into the following approximate age groups, early adolescents (11-14 yo), middle adolescents (15-17 yo), and late adolescents (18-21 yo) (Twenge & Park, 2019). The study was developed to examine at what age adolescents begin demonstrating behaviors associated with adulthood.

Twenge and Park (2019) analyzed survey data from 8.4 million US adolescents from 1976-2016 to examine the rate of maturation from childhood to adulthood by determining the onset of adult behaviors (Twenge & Park, 2019). The results demonstrated a decline in the transition to adulthood among US adolescents across generations. Americans born between 1980-1994 (*Millennials)* and 1995-2012 (*iGens),* were slower to perform behaviors associated with adulthood compared to previous generations (Twenge & Park, 2019). Generational differences based on life history, are neither negative or positive, rather a direct adaptation and evolution to meet cultural, environmental, and societal norms (Campbell et al., 2015; Twenge & Park, 2019). The behaviors associated with transitioning to adulthood have inherently emotional and social psychological elements (Mittal & Griskevicius, 2014). The research provided new evidence that the today's college-aged student has emotional and social development as that of a high school student from a previous generation.

Impact on Psychological Well-being.

Twenge, Martin, and Campbell (2018) investigated the influence of technology on adolescent psychological well-being. The study analyzed cross-sectional survey data from 1.1 million 8th-12th graders between 1991-2016 (Twenge, Martin, and Campbell, 2018). Psychological well-being was measured in terms of life satisfaction, happiness, self-satisfaction, and self-esteem. Participants that spent more time on screen-based activities compared to those who spent more time on non-screen activities, demonstrated less psychological well-being (Twenge, Martin, and Campbell, 2018). A retrospective comparison of screen time showed a negative correlation between screen time and in-person social interactions, indicating that as screen time increased in-person social skills decreased (Twenge et al., 2018). Psychological well-being among American adolescents began to decline in 2012, plateauing in 2016 (Twenge et al., 2018; Twenge, 2020). Research has concluded that the mass adoption of the smartphones, the rapid growth of social media, and increase electronic communication mediums contributed to the decline (Twenge et al., 2018; Twenge et al., 2019). Consequently, the generational cohort that growing up during this time period report lower levels of psychological well-being (Twenge et al., 2018; Twenge et al., 2019; Twenge; 2020).

The decline in psychological well-being evidenced in the aforementioned research demonstrates an emotional-social development change among American adolescents. The Millennial and iGen generations spend an increasing amount of time on electronic communication and screen time, such as the internet, social media, texting, gaming, etc. The increase in screen time activities are correlated with less in-person social interaction (Twenge et al., 2019). Less experiences with in-person social interaction during the adolescent stages can be contributed back to the emotional and social development delay seen in Millennial and iGen

generations (Twenge & Park, 2019). Secondary to increases in screen time and decreases in psychological well-being, today's college-aged students may not possess the in-person social skills before entering college. It is critical that athletic training students demonstrate in-person social skills within the context of delivering patient-centered care, however empirical research has yet to establish these behaviors in athletic training.

Impact on Empathy

A meta-analysis examined the ability to demonstrate behaviors associated with empathy among college-aged students between 1979 and 2009 (Konrath, O'Brien, &Hsing, 2011). The researchers hypothesized that the data would indicate a decline in empathy among Millennial and iGen generational cohorts. Despite being more socially contentious, empirical research indicates that these generational cohorts are more focused on "me" versus "we" compared to previous generations (Twenge, 2013a; Twenge, 2013b). The researchers included 13,737 college student surveys examining empathy and awareness of others. College-aged students report a decline in behaviors associated with empathy and awareness of others (Konrath, O'Brien, &Hsing, 2011). The results of this study demonstrate a decline in empathetic behavior and awareness of others in Millennials and iGens compared to previous generations (Konrath, O'Brien, &Hsing, 2011). Declining trends in empathy continued to emerge in more recent empirical research of the Millennial and iGen generational cohorts (James et al., 2017; Twenge, 2013; Zarins & Konrath, 2016). An increase focus on "self", or narcissism among these generational cohorts is correlated with declining empathy and less concern for others (Twenge, 2013a; Twenge, 2013b; Twenge; Twenge et al., 2019). The empirical evidence to support the declining ability for today's college-aged students to demonstrate behaviors associated with empathy and awareness of others is consistent (James et al., 2017; Twenge, 2013; Zarins & Konrath, 2016). Through cultural

changes during adolescent development as previously discussed, the Millennial and iGen generational cohorts have a different perspective of themselves and others compared to other generations (Twenge, 2013a; Twenge, 2013b; Twenge et al., 2019). The ability to demonstrate empathy and awareness of others are both aspects of healthcare core competencies.

Emotional Intelligence in Healthcare

The ability of healthcare providers to deliver patient care that aligns with the Institution of Medicine (IOM) and the Accreditation Council for Graduate Medical Education (ACGME) relies on the demonstration of behaviors associated with EI skills (ACGME, 2017; Arora et al, 2010; Weng et al, 2008; Quoidbach & Hansenne, 2009). Healthcare providers that demonstrate EI skills are able to better demonstrate empathy, facilitate patient trust, and improve patient satisfaction and bed side manor (Wagner et al., 2002; Weng et al., 2008; Weng et al., 2011). Weng et al. (2008) concluded that EI was correlated with the healthcare provider's age, which suggests that EI is improved with age and experience in healthcare (Coskun et al., 2018; Weng et al., 2008). The assessment of EI in nurses and nursing leadership has indicated that EI abilities are associated with higher levels of caring, mediation, team work, job satisfaction, personal well-being, authenticity, patient satisfaction, as well as, lower burnout rates (Akerjordet & Severinsson, 2010; Morrison, 2008; Quoidbach & Hansenne, 2009; Rego, Godinho, McQueen, & Cunha, 2010; Weng et al., 2011; Wessel, 2008). Healthcare providers that exhibit higher EI abilities demonstrate the ability to deliver patient care under emergency situations by maintaining an even temperament, providing clear communication, and by facilitating teamwork resulting in better patient outcomes (Chang et al., 2014). Cadmen and Brewer (2001) suggest that clinicians with higher levels EI positively influences patient care, therefore EI skills should be integrated into the selection and education process of healthcare students (Cadmen & Brewer,

2001; Walsh, Chang, & Tse, 2015). Accepting that EI plays a fundamental role in the delivery of effective healthcare and EI among healthcare providers increases with age and experience, there is a direct connection to the importance of EI development in higher education professional healthcare programs.

EI skills are valuable fundamental abilities that aide nurses and physicians in the delivery of healthcare. Likewise, EI has been shown to be an important aspect of healthcare education programs (Cherry, Fletcher, O'Sullivan, & Dornan, 2014). Among nursing students EI is correlated with student success, transition to autonomous practice, and development of basic healthcare competencies (Bellack, 1999; Morris & Hancock, 2013). Medical students that demonstrated higher levels of EI are better at managing stress, as well as maintain better social, physical, and mental health (Arora et al, 2010; Arora et al, 2011; Extremera & Fernández-Berrocal, 2006). EI abilities have been widely theorized to contribute to desirable traits exhibited by healthcare professionals. Despite criticisms of the psychometric properties of EI assessment, correlations made between EI skills and positive workplace behavior and performance are widely accepted (Locke, 2005; Mayer et al., 2016; McCleskey, 2014). EI skills support mitigation of stress and anxious response to emotional-social workplace situations, therefore are valuable components to a healthcare professionals competency.

Emotional Intelligent, Stress, and Anxiousness

The combination of systemic delay in emotional and social development in today's college-aged students and the rigors of healthcare education, healthcare students today are different than any previous generation of college student and experience more stress and anxiety (Twenge & Park, 2019; Foster et al, 2018). Healthcare education programs are emotionally and physically demanding in regards to time, fatigue, life challenges, financial implication, academic

rigor, acquisition of clinical skills, and patient care (Birks et al., 2009; Foster et al., 2018; Pau & Croucher, 2003). Healthcare students experience greater levels of stress and anxiety compared to non-healthcare students (Bartlett, Taylor & Nelson, 2016; Foster et al. 2018), with female healthcare students reporting higher levels than male peers (Foster et al., 2018). Eighty percent of healthcare students report greater signs of stress and anxiety compared to non-healthcare students (Macauley et al., 2018). Healthcare students that experience high levels of stress and anxiety during their education are more likely to experience stress and anxiety during their professional careers (Finkelstein et al., 2007). Athletic training students, like their healthcare peers, experience high levels of stress and anxiety related to academic and clinical performance (Bowman & Dodge, 2013; Birks, McKendree, Watt, 2009; Foster et al., 2018, Cheung & fong Au, 2011).

The inability to cope with stress and anxiety has been linked to poor clinical and academic performance in medical students and nursing students (Cheung & fong Au, 2011; Ranasinghe et al., 2017). Unmanaged stress and anxiety can have negative personal and professional consequences to the student, such as psychological well-being, reactive decision-making, burnout, and a decrease in academic and clinical performance (Berger & Sarnyai, 2015; Coskun et al., 2018). Persistent exposure to unmanaged stress and anxiety during healthcare education is correlated with burnout, or emotional, physical, and cognitive exhaustion (Bullock et al., 2017). Burnout is correlated with decreased life satisfaction, decreased performance, and attrition (Bullock et al., 2017). Graduate healthcare students experience higher rates of burnout than their non-healthcare peers (Bullock et al., 2017). Empirical research supports a correlation between EI skills and the ability to mitigate stress and anxiousness.

Foster et al (2018) explored the relationship between EI skills and perceived stress in 203 healthcare students (Foster et al., 2018). Using a cross-sectional survey design the researchers measured EI and perceived stress in nursing, dental, and pharmacy students using the Genos model of EI. EI was negatively correlated with perceived stress level reported by healthcare students. Healthcare students reported higher levels of perceived stress and lower EI scores compared to available normative date (Foster et al., 2018). Elevated perceived stress scores compared to normative data is consistent with the literature (Birks et al., 2009). Based on research presented by Twenge and Park (2019), the lower EI scores may be due to generational differences in emotional and social development as the mean participant age in this study was twenty-five years old (Twenge & Park, 2019). Students who demonstrated more behaviors associated with EI skills reported less perceived stress across disciplines (Foster et al., 2018). Foster et al (2018) concluded that EI skills appear to be an important aspect of a healthcare student's ability to manage stress and should be integrated into the curriculum (Foster et al., 2018).

Emotional Intelligence and Performance

An individual's ability to consistently demonstrate behaviors associated with EI skills are correlated with academic and clinical performance. In 2014, a study examined EI skills, academic performance, communication skills, and interpersonal skills among 367 medical students over the course of three years during medical education (Libbrecht, Lievens, Carette, & Cote, 2014). The objective was to determine if EI skills influence intellectual academic performance in content areas of communication and interpersonal skills. Medical students that demonstrate higher EI performed higher on communication and interpersonal skills related to patient care, indicating a positive correlation between EI and clinical performance (Libbrecht, et

al., 2014). Emotional regulation as an independent factor demonstrated the highest correlation with success in communication and interpersonal skills (Libbrecht, Lievens, Carette, & Cote, 2014). The study concluded that EI skills may be used to predict a medical students' performance in communication and interpersonal skills needed to deliver patient care. EI skills were not correlated with cognitive ability in medial domains (Libbrecht, Lievens, Carette, & Cote, 2014). This study provides evidence that EI skills are important factors in predicting an individual's ability to demonstrate behaviors associated with positive "bed side manner".

In 2019, researchers examined the relationship between EI skills and academic performance through a cross-sectional survey of 113 dental students from five international geographical locations (Haralur, Majeedm Afzal, & Chaturvedi, 2019). Data was collected over the course of three years in order to reflect development over the three-year dental education. Students who demonstrated higher levels of EI performed better in dental courses (Haralur, Majeedm Afzal, & Chaturvedi, 2019). Beyond academic performance, higher EI scores are positively correlated with interest in studying dental medicine, as well as, socialization with the institution (Haralur, Majeedm Afzal, & Chaturvedi, 2019). Through regression analysis of the survey results, the researchers concluded that measuring EI may serve as a predicator of future academic and clinical success for factors beyond intellectual ability. Likewise, EI skills are positively associated with clinical performance and student retention (Marvos & Hale, 2015). This provides evidence that EI skills influences academic and clinical performance among healthcare students.

Emotional intelligence and higher education

A review of healthcare education demonstrates support that EI skills can be taught, assessed, and improved in healthcare education programs. Faculty and program administrators in higher education who demonstrate high levels of EI are able to model these behaviors to students (Cobbs & Mayer, 2000; Greiner & Knebel, 2003; Vandervoort, 2006; Walsh, Chang, & Tse, 2015). Developing EI abilities among faculty and program administrators can help support the fundamental abilities need for professionalism, communication, and management of student interactions (Chang, 2007; Cherry et al., 2014; Walsh, Chang, & Tse, 2015). The integration of EI development for faculty and students in higher education, specifically professional healthcare programs, can have positive impacts on student and program outcomes. However, EI should be implemented into programs with strategic planning and individualization to meet the student needs (Cherry, Fletcher, O'Sullivan, & Dornan, 2014). EI abilities can be improved overtime through assessment, targeted training, feedback, and practice (Cobb & Mayer, 2000; Goleman, 2013; Vesely et al., 2014). Kozlowski et al (2018) significantly improved EI skills in 60 clinical nurses in a five-hour workshop followed by a 30 minutes one-on-one consultation using the Genos model of EI (Kozlowski et al, 2018). Improving EI requires strategic integration of EI culture into the curriculum (Cherry, Fletcher, O'Sullivan, & Dornan, 2014; Cobb & Mayer, 2000).

Conceptual Framework

Athletic training education is currently transitioning the professional athletic training degree, the entry-level degree, from the undergraduate to the graduate level (CAATE, 2019). The transition to the graduate degree has been proposed to align athletic training with its healthcare peers and drive the expansion of clinical practice (CAATE, 2019). Graduate healthcare student

experience high levels of stress and anxiety compared to their non-healthcare peers (Foster et al., 2018). Athletic training students experience similar levels of stress and anxiety under the current academic and clinical model (Barrett, Mazoerolle, & Eason, 2016). Based on finding among graduate healthcare students, athletic training students and educators should anticipate graduate students to have higher levels of stress and anxiety (Foster et al., 2018). Unmanaged stress and anxiety in students can impact academic performance, clinical decision making, burnout, overall well-being, and life satisfaction (Ranasinghe et al., 2017). Based on available empirical evidence from other healthcare disciplines, emotional intelligence skills may play an important role in the future of athletic training education and clinical practice (Arora et al, 2010; Foster et al, 2018). Furthermore, athletic training programs have been tasked with ensuring that students are able to demonstrate the core healthcare competencies as outline by the Institution of Medicine (IOM) and the Accreditation Council for Graduate Medical Education (ACGME) (CAATE, 2019). Athletic Training Programs will be responsible for demonstrating assessment and acquisition of the core competencies within the Master Assessment Plan (CAATE, 2019). Emotional intelligence skills align as the fundamental behaviors associated with the successful performance of the core healthcare competencies (Arora et al., 2010; Arora et al., 2011).

The EI literature indicates that higher levels of EI skills have been correlated with improved leadership competency, job satisfaction, academic performance, clinical performance, patient care skills, communication skills, and clinical decision-making (Arora et al., 2010; Chang et al., 2014; Goleman, 1995; Weng et al., 201; Quoidbach & Hansenne, 2009; Ranasinghe et al., 2017; Salovey & Mayer, 1990). EI skills are also correlated with decreased stress and anxiety among healthcare professionals and students (Foster et al., 2018). EI skills are the fundamental

skills associated with the IOM and ACGME core competencies of healthcare (Morris & Hancock, 2013).

Chapter Summary

Based on a review of the available literature, there are no empirical studies that have assessed EI skills in athletic training students. Empirical evidence outlined in this chapter demonstrates that college-aged students entering healthcare programs have the emotional and social development of a middle-aged adolescent from a previous generational cohort (Twenge & Park, 2019). Therefore, lower EI scores compared to previous normative data has been documented among college-aged healthcare students (Foster et al., 20018). The advancement of athletic training education to the graduate level have required students to develop competencies associated with the demonstration of EI skills (Arora et al., 2010). Yet, no empirical research studies have been published that examine if athletic training student demonstrate the behaviors associated with EI skills.

Chapter 3: Methods and Design for Action

This study investigated the frequency that athletic training students (ATS) typically demonstrate behaviors associated with emotional intelligence (EI) skills using the Genos Emotional Intelligence Inventory (GEII). This study was approved by the Plymouth State University Institutional Review Board (IRB), documentation of IRB approval is presented in Appendix A. Data was collected using an anonymous cross-sectional web-based survey design. This chapter will outline the research purpose, design, participants, instrumentation, procedures, and data analysis used in this study.

Purpose

The primary purpose of this study was to determine the frequency in which undergraduate and graduate professional athletic training students (ATS) demonstrate behaviors associated with EI skills, as well as the impact of age, gender, grade point average (GPA), and clinical experiences hours (CEH) had on EI skills. The secondary purpose of this study was to determine the difference between intrapersonal EI skills and interpersonal EI skills. Lastly, the tertiary purpose of this study was to determine the difference between ATS EI scores and Genos normative sample data.

Research Design

A quantitative, observational cross-sectional design was used to examine EI skills in ATS using an anonymous Qualtrics (Qualtrics Software Company, Provo, UT) survey (Portney, 2020; Setia, 2016). Demographic information and EI skills were captured in a cross-sectional assessment of undergraduate and graduate professional athletic training students. A cross-sectional survey research design was selected as it is an economical and efficient way to reach a large sample in a single moment of time (Portney, 2020; Setia, 2016). Previous authors have published statistical significances between emotional intelligence, stress, anxiety, job

satisfaction, and performance using similar methodology as proposed in this research study (Foster et al., 2018). The cross-sectional design was a feasible methodology for both participant recruitment and providing sufficient data to answer the research questions.

Participant Recruitment

Following approval granted by the Plymouth State University IRB, participants were actively recruited for five weeks in January and February 2020. Eligible athletic training students were recruited across the United States of America (USA), and represented various genders, races, and ethnicities. The primary method of participant recruitment was done through an electronic message (email) sent to all undergraduate and graduate program directors of accredited professional athletic training programs. Word of mouth between colleagues was also used as a recruitment method. A total of 373 program directors were identified via the Commission on Accreditation for Athletic Training Education (CAATE) website, and publicly available email addresses were used to distribute recruitment information (CAATE, 2019). A copy of the recruitment message can be found in Appendix B. All electronic messages were sent through Qualtrics' distribution platform with an anonymous link to the research survey. Program directors were asked to forward the email to any eligible students based on the inclusion criteria outlined in the recruitment email. Follow up recruitment emails to all program directors were sent at the beginning of each week for five weeks. Once a sufficient number of survey responses were collected, active data collection was ended and a thank you email to all program directors was distributed. Any surveys collected after data collection was ended were not included in the present study. All participant data was exported from Qualtrics for data processing, scoring, and analysis.

Participants

In total, 728 athletic training students participated in the anonymous Qualtrics survey, 658 completed the survey and meet criteria for inclusion in data analysis. The descriptive statistics for the sample demographic information is presented in Table 8, in the next chapter. This study recruited and enrolled undergraduate (n = 471) and graduate (n = 187) ATS between the ages of 18-30 who were currently enrolled in an accredited professional athletic training program in the USA during the 2019-2020 academic year. Individuals interested in participating in the study were screened for eligibility based on the inclusion and exclusion criteria.

Inclusion Criteria

Individuals between the ages of 18-30 currently enrolled in a CAATE accredited undergraduate or graduate professional program in athletic training during the 2019-2020 academic year were included. The participant had mobile or desktop internet access to complete the online survey. The survey was open to all genders, races, and ethnicities.

Exclusion criteria

Individuals not between the ages of 18-30 were excluded. Individuals who were not enrolled in a CAATE accredited undergraduate and graduate professional athletic training program were excluded. Participants were not excluded based on gender, race, or ethnicity.

Sample

The population (N) of eligible undergraduate and graduate students enrolled in a professional athletic training program was estimated at 7,000 students at the time of data collection (CAATE, 2019). A random sample of convenience was collected using voluntary participation by clicking on the anonymous survey link, a total of 658 athletic training students completed the survey and were included in data analysis. The ATS sample collected exceeds sample sizes in previously published research results with similar methodology (Foster et al.,

2018). Based on the sample collected the results are generalizable to undergraduate and graduate athletic training students, it may not be appropriate to extrapolate the results to other disciplines.

Survey Instrument

Data was collected using an anonymous link to a Qualtrics survey. Interested students who clicked on the link were directed to the informed consent. The full informed consent form is presented in Appendix C. After reading the informed consent, potential participants were given an opportunity to email or call the primary investigator with questions or concerns. Individuals who chose to participate in the study were asked to provide consent by selecting 'I agree to participate' and progress to the survey using the next button. The survey consisted of two sections, demographic information and the 31-item Genos Emotional Intelligence Inventory – Concise Version. The demographic questionnaire and the GEII can be found in Appendix D. The survey took ATS participants approximately 7-10 minutes to complete, which is consistent with the GEII Technical Manual (Gignac, 2010). The following sections describe in detail each section of the data collection survey.

Demographics

Participants were asked to provide demographic information to confirm inclusion criteria and record information about the ATS sample included in the study. The survey was designed to terminate if inclusion criteria were not met. Participants who were not eligible for inclusion were thanked for their time and the survey was ended automatically. Implementing the automated termination feature ensured that that only eligible individuals were allowed to progress to the GEII. The demographic questionnaire captured the dependent variables, including age, gender, level of program, CEH, and GPA. No identifiable or personal health information was collected. The full demographic questionnaire is presented in Appendix C. Once the demographic

questionnaire was completed, participants progressed to the GEII instructions by advancing the survey using the next button.

Genos Emotional Intelligence Inventory

The GEII – Concise version is a 31-item assessment instrument was used to measure how often the participant demonstrates behaviors associated with the seven EI factors of the Genos Model (Gignac, 2010). Participants read a brief introduction and instructions before answering the 31-items on a 1 to 5 Likert scale (1 = "Almost Never" and 5 = "Almost Always"). The GEII Concise Version is a valid and reliable EI instrument when measuring EI behaviors during work related situations (Palmer et al., 2009).

The GEII - Concise version is based on statistical and psychometric properties of the original 70-item long form (Palmer et al., 2009). The GEII measures an individual's perception of how often they demonstrate behaviors associated with the seven EI factors, which can be scored independently as factor scores and/or together to produce a total EI score. The GEII is a valid and reliable assessment of behaviors associated with EI skills (Palmer et al., 2009; Foster et al., 2018). Gignac (2010) reported strong internal factor reliability (α) ranging between 0.71 and 0.85 for the seven factor scores (Gignac, 2010). The GEII has sound psychometric properties with acceptable levels of face validity and content validity (Gignac, 2010). Through the analysis of 4,775 respondents, the GEII demonstrated strong factorial validity with a confirmatory factor analysis of 0.948 (Gignac, 2010). The 31-item GEII – Concise version demonstrates strong correlation ($r = 0.97$, $p < 0.001$) with the 70-item long form (Gignac, 2010). In summary, the GEII demonstrates strong validity and reliability as an EI instrument and has been used in research studies across a wide range of disciplines to successfully and accurately measure EI behaviors in work related situations.

Dependent and Independent Variables

The dependent and independent variables were collected via a single cross-sectional survey. The dependent variables were collected using the demographic questionnaire, while the ten independent variables were collected using the GEII. The dependent and independent variables are accessible in Table 6.

Table 6

Dependent and Independent Variables

Dependent Variables	Independent Variables
Age	Total EI Score
Gender	Seven EI Factor Scores
Level of degree program	Emotional Self-awareness (ESA) Score
Grade Point Average	Emotional Expression (EE) Score
Clinical Experience Hours	Emotional Awareness of Others (EAO) Score
Genos Normative Data*	Emotional Reasoning (ER) Score
	Emotional Self-Management (ESM) Score
	Emotional Management of Others (EM) Score
	Emotional Self-control (ESC) Score
	Intrapersonal EI Score
	Interpersonal EI Score

*Published in the Genos Emotional Intelligence Inventory Technical Manual (Gignac, 2010)

Note. This table displays the dependent and independent variables collected in this study.

Data Processing

Numeric survey data was exported from Qualtrics (Qualtics XM, Washington, D.C.) to Microsoft Excel (Microsoft Corporation, Redmond, WA). In total, 728 surveys were captured and exported to an excel spreadsheet for data processing and scoring. Incomplete data sets were deleted and not included in data analysis. Likewise, any data set that reflected inconsistent response times was deleted and not included in data analysis.

Survey Completion Time

The time each participant took to complete the survey was recorded and exported to excel for processing. Completion times were assessed for duration and inconsistencies. The typical response time to complete the survey was 7-10 minutes, which is consistent with the GEII Technical Manual's average response time (Gignac, 2010). According to the GEII Technical Manual, the online version of the survey should take participants approximately 10 minutes with completion times less than 2 minutes or more than 30 minutes having validity concerns (Gignac, 2010). Individuals who completed the GEII too quickly may not have responded thoughtfully, while those who took too long may have over thought their responses. Both situations impact the accuracy of the results, therefore any survey that was completed under 2 minutes and longer than 30 minutes was eliminated from data analysis. After incomplete data sets and inconsistent response times were removed, 658 participants were included in data processing and scoring.

Data Processing and Scoring

In Microsoft Excel, GEII data was processed in strict accordance with the GEII Technical Manual. First, the GEII – concise version has 11 of the 31 items negatively phrased, therefore required recoding before they could be scored. Each of the 11 items were recoded into a new column. Once recoded, total EI, seven EI factor scores, intrapersonal EI, and interpersonal EI

scores were calculated using the formulas outlined in Table 7. Demographic and GEII data was then imported into the Statistical Package for the Social Sciences (SPSS) 26 (IBM Corporation, Armonk, NY) software program for data analysis.

Table 7

Genos Emotional Intelligence Inventory Scoring

Score	Item Number**
Emotional Self-Awareness (ESA)	2* + 4* + 24 + 28
Emotional Expression (EE)	5* + 7 + 9 + 18 + 29*
Emotional Awareness of Others (EAO)	11* + 12 + 19 + 22*
Emotional Reasoning (ER)	1 + 8 + 15 + 16 + 17
Emotional Self-management (ESM)	3 + 6* + 13* + 20 + 21
Emotional Management of others (EMO)	14 + 25 + 27* + 31*
Emotional Self-control (ESC)	10* + 23* + 26 + 30
Intrapersonal EI	ESA + EE + ESM + ESC
Interpersonal EI	EAO + ER + EMO
Total EI	Sum of 31-items

*recoded items; **Scoring procedures adopted from the GEII – Concise Version Technical Manual; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table shows the scoring procedure for each independent variable collected using the genos emotional intelligence inventory.

Data Analysis

All dependent and independent variables were imported into SPSS for statistical testing. Nominal dependent variables (gender, level of degree, NATA district, ethnicity, and clinical experiences hours) were manually coded for accuracy. Descriptive statistics were calculated for all dependent and independent variables, which are presented in the next chapter. Statistical analyses were selected and administered based on the three research questions. The Cronbach's

alpha, one-sample *t* test, independent *t* test, and Pearson correlation were used to answer the aforementioned research questions (Cronk, 2019; Portney, 2020). Parametric interferential statistical tests were chosen specifically to answer the research questions using normally distributed data (Cronk, 2019; Portney, 2020). The rationale for each statistical approach used to examine the research questions follows.

Statistical Analysis for Research Question One

An independent *t* test and Pearson correlation was used to determine if there was a difference between EI skills in undergraduate and graduate athletic training students, as well as examine the impact of age, gender, GPA, and CEHs on EI skills.

SPSS was used to calculate a series of independent *t* tests comparing the mean EI scores between undergraduate and graduate students, males and females, and >501 CEHs and <500 CEHs, respectively (Cronk, 2020; Portney, 2020). An independent t test was used to determine if the means of two the groups are significantly different, therefore a significant ($p > 0.05$) result indicates that the means of the two groups were different (Cronk, 2020; Portney, 2020). The magnitude and the direction of the difference was determined by comparing the two values (Cronk, 2020; Portney, 2020). The statistical results for the independent *t* tests are presented in the next chapter.

SPSS was used to calculate a bivariate Pearson correlation to determine if there was a relationship between EI scores and age and GPA. A Pearson correlation was used to determine if a relation exists between the two variables, as well as determine the magnitude and direction of relationship. The correlation coefficient (r) was used to determine the magnitude of relationship. A correlation coefficient less than 0.3 were considered weak, between 0.3 to 0.7 were considered moderate, and greater than 0.7 were consider strong (Akogulu, 2018; Cronk, 2020; Portney, 2020). The statistical results for the Pearson correlation tests are presented in the next chapter.

Analysis for Research Question Two

A series of one-sample *t* tests was used to determine if there was a difference between mean EI scores among ATSs and GEII normative sample data. The one-sample t test was used to compare the data collected in the present study to the known Genos normative sample (Cronk, 2019; Gignac, 2010; Portney, 2020). A one-sample t-test is a statistical analysis used to compare the independent variable to a single population mean (Whitley & Ball, 2002). Gignac (2010) published normative total EI score and EI factor score data gathered from 4,775 individual self-reported responses using the seven factor GEII (Gignac, 2010). The results for this research question are presented in the next chapter.

Statistical Analysis for Research Question Three

An independent *t* test was used to determine if there was a difference between mean intrapersonal EI scores and interpersonal EI scores among athletic training students. In addition, a one-sample t test was calculated comparing mean intrapersonal and interpersonal EI scores to the Genos normative samples. SPSS was used to calculate an independent *t* tests comparing the mean intrapersonal EI scores and interpersonal EI scores among athletic training students (Cronk, 2019; Portney, 2020). The statistical results for the independent *t* tests are presented in the next chapter.

SPSS was used to calculate a one-sample t test comparing the mean intrapersonal EI scores and interpersonal EI scores to the Genos normative sample mean. The one-sample *t* test was calculated to determine if a significant difference exists between the ATS sample and the known Genos mean, therefore a significant ($p > 0.05$) result indicates that the means of the two groups were different (Cronk, 2019; Portney, 2020). The magnitude and the direction of the difference was determined by comparing the two values (Cronk, 2019; Portney, 2020). The statistical results for the one-sample t test are presented in the next chapter.

Chapter Summary

The purpose of this study was to examine EI skills in athletic training students, as well as investigate the impact age, gender, GPA, and CEHs have on their ability to demonstrate theses skills. This study aimed to answer three research questions using the Genos Emotional Intelligence Inventory (GEII); (1) What is the frequency that athletic training students demonstrate behaviors associated with emotional intelligence skills and how do age, gender, GPA, and CEHs impact EI skills? (2) Is there a difference between athletic training student EI scores and Genos normative data?, and (3) Is there a difference between intrapersonal EI skills and interpersonal EI skills? This study provided the first methodology and research design to assess EI skills in athletic training students using the Genos Emotional Intelligence Inventory. Previous research studies have employed similar methodologies in other disciplines with success.

A cross-sectional survey design was used to collect objective demographic and EI skill data from 658 athletic training students. Data was collected using an anonymous Qualtrics survey which was distributed to eligible athletic training students through their program director. Data was processed and scored in accordance with the GEII Technical Manual (Gignac, 2010). Parametric inferential statistical analyses were selected to answer each research question. The results of data analysis are presented in the next chapter.

Chapter 4: Data Analysis and Recommended Actions

This chapter will interpret and discuss the results and conclusions of this study and their implications on athletic training education. The result regarding each of the research questions are presented and the implications of those results are discussed. Future research directions and limitations of this study will also be discussed. The purpose of this study was to investigate how often athletic training students (ATS) demonstrate behaviors associated with emotional intelligence during academic and clinical experiences. In addition, the secondary purpose of this study was to determine if there was a difference between intrapersonal and interpersonal EI skills among athletic training students. Based on previously published emotional intelligence data in other healthcare disciplines, the expectation was that the current generation of athletic training students would demonstrate behaviors associated with emotional intelligence at a lower frequency compared to normative data from individuals born between 1955 and 1976 (Foster et al, 2018). This study aimed to answer three research questions using the Genos Emotional Intelligence Inventory (GEII); (1) What is the frequency that athletic training students demonstrate behaviors associated with emotional intelligence skills and how do age, gender, GPA, and CEHs impact EI skills? (2) Is there a difference between athletic training student EI scores and Genos normative data?, and (3) Is there a difference between intrapersonal EI skills and interpersonal EI skills?

ATS Sample Demographics

The sample collected totaled 658 undergraduate and graduate ATSs currently enrolled in an accredited professional level athletic training program. Based on approximately 7,000 eligible athletic training students in the United States of America, the sample reflects approximately 9.4% of the population. The sample of 658 athletic training students was sufficient for data analysis as it exceeds previously published research studies with similar methodologies (Gignac,

2010; Foster et al., 2018). Descriptive statistic results from the demographic questionnaire are presented in Table 7 and grade point average and clinical experience hours are presented in Table 8. The sample captured athletic training students across from each of the ten NATA districts. Based on demographic reports published by the NATA and CAATE, the sample demographics were consistent with trends observed in the profession of athletic training (CAATE, 2019; NATA, 2019).

Table 8

Participant Demographic Characteristics

	Total	BSAT	MSAT
Sample n (%)	658 (100%)	471 (71.58%)	187 (28.42%)
Gender			
Male	164 (24.92%)	119 (25.3)	45 (24.1)
Female	494 (75.08%)	352 (74.5)	142 (74.9)
Age (years)			
Mean (SD)	21.67 (1.92)	21.02 (1.53)	23.30 (1.82)
Range	18-30	18-30	20-29
Ethnicity n (%)			
Native American	3 (0.46%)	3 (0.6)	0.0 (0.0)
Asian	26 (3.95%)	16(3.4)	10 (5.3)
Black/African American	45 (6.84%)	31(6.6)	14 7.5)
White	539 (81.91%)	391(83.0)	148 (79.1)
Hispanic/Latinx	42 (6.38%)	29(6.2)	7.0 (7.0)
Other	3 (0.46%)	1 (0.2)	2.0 (1.1)
NATA District			
District I	78 (11.85%)	54 (11.5)	24 (12.8)
District II	120 (18.24%)	80 (17.0)	40 (21.4)
District III	102 (15.5%)	89 (18.9)	13 (7.0)
District IV	147 (22.34%)	111 (23.6)	36 (19.3)
District V	42 (6.38%)	21 (4.5)	21 (11.2)
District VI	40 (6.08%)	17 (3.6)	23 (12.3)
District VII	18 (2.74%)	18 (3.8)	0 (0.0)
District VIII	5 (0.76%)	5 (1.1)	0 (0.0)
District IX	80 (12.16%)	66 (14.0)	14 (7.5)
District X	26 (3.95%)	10 (2.1)	16 (8.6)

NATA = National Athletic Trainers' Association

Note. This table reviews the demographic information of the athletic training student sample collected in this study.

Table 9

Self-Reported Grade Point Average (GPA) and Clinical Experience Hours (CEH)

	Total	BSAT	MSAT
Sample n (%)	658 (100%)	471 (71.58%)	187 (28.42%)
Overall GPA			
Mean (SD)	3.50 (0.33)	3.45 (0.33)	3.61 (0.30)
Range	2.29-4.0	2.29-4.0	2.80-4.0
95% CI	3.47-3.52	3.42-3.48	3.56-3.65
Male GPA			
Mean (SD)	3.42 (.33)	3.38 (0.33)	3.54 (0.32)
Range	2.56-4.00	2.56-3.98	2.8-4.00
95% CI	3.49-3.55	3.32-3.44	3.45-3.64
Female GPA			
Mean (SD)	3.52 (.32)	3.48 (0.32)	3.63 (0.30)
Range	2.29-4.00	2.29-4.0	3.0-4.0
95% CI	3.49-3.55	3.45-3.53	3.58-3.68
Clinical Hours (%)			
1-100	32 (4.9)	30 (6.4)	2(1.1)
101-300	104 (15.8)	67 (14.2)	37 (19.8)
301-500	140 (21.3)	83 (17.6)	57 (30.5)
501-700	95 (14.4)	79 (16.8)	16 (8.6)
701-1000	140 (21.3)	109 (23.1)	31 (16.6)
1000+	147 (22.3)	103 (21.9)	44 (23.5)

GPA = grade point average; CEH = clinical experience hours

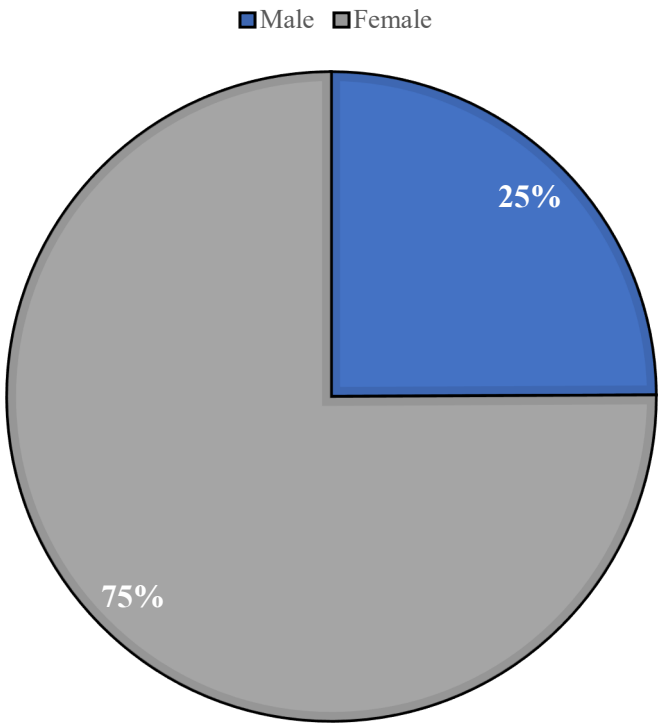
Note. This table displays the mean, standard deviations, and confidence intervals for athletic training student grade point average and clinical experiences hours.

Gender

The results of the demographic questionnaire of 658 athletic training students provided insight into the gender and diversity in the next generation of athletic trainers. According to the 2017-2018 CAATE analytics report of undergraduate and graduate athletic training programs, 65% of all athletic training students are female, which has been trending up over the last decade (CAATE, 2019). The sample collected reflected 75% female and 25% male (see Figure 2). Ensign et al. (2017) reported 73.1% female in a survey of 577 athletic training students (Ensign et al., 2017). The sample collected in this study reflected the changing gender demographics across the profession of athletic training. Before 1972, the profession of athletic training was predominately male. The 1972 adoption of Title IX was the catalyst for gender equality in athletic training. Since the inception of Title IX, the number of female athletic trainers has been growing consistently which is reflected as a 3:1 female to male ratio in the future generation of athletic trainers. The ratio of females and males within the ATS sample reflects the future demographics of athletic trainers.

Figure 2

Participants by Gender



Note. This figure illustrates the ratio of males to female athletic training students surveyed in this study.

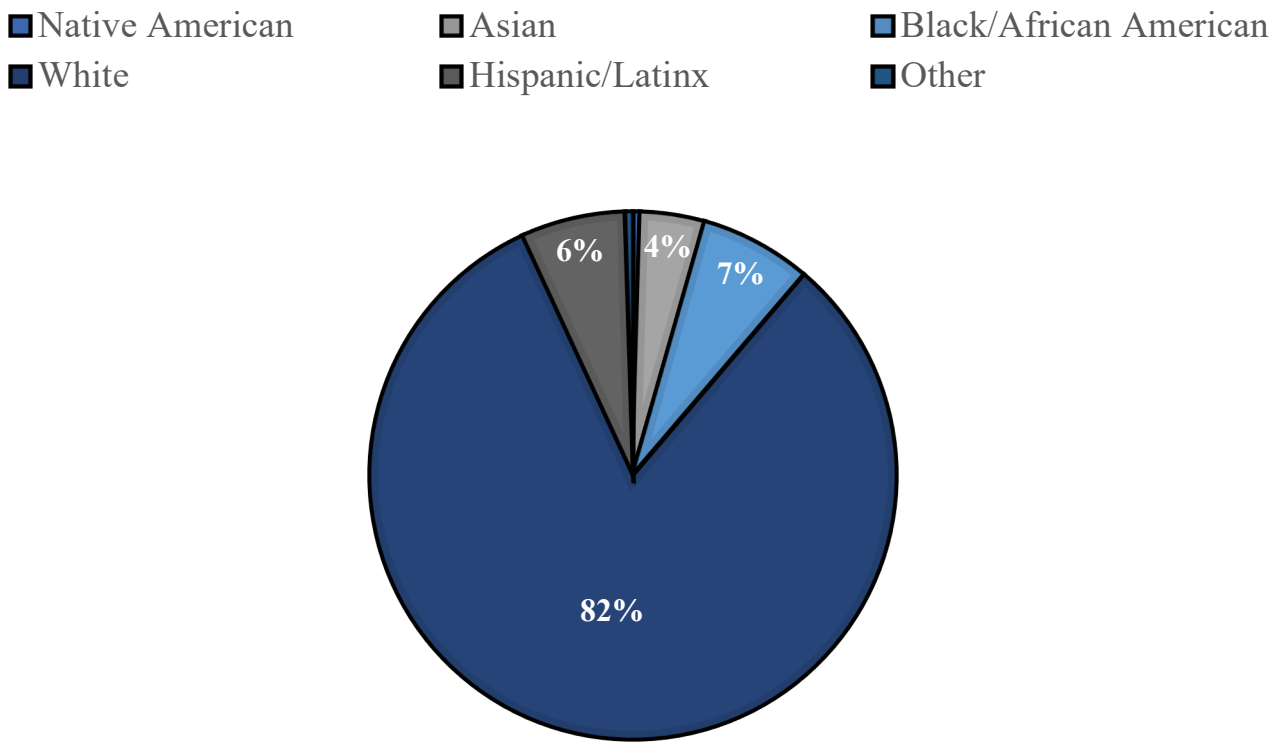
Ethnicity

From a historical perspective, the profession of athletic training was predominately comprised of individuals of Caucasian or European decent. Within the sample collected in this study, 19% of the participants identified as Black, Asian, Latinx, or Native American (see Figure 3). These results are consistent with recently published demographical data on athletic training students (Ensign et al., 2017, Abe-Hiraishi et al., 2018). Racial and ethnic diversity has steadily increased throughout the profession of athletic training, evidenced by a 2010 report that found

10% diversity among certified athletic trainers (Marra et al., 2010). The ethnic diversity of the ATS sample collected reflects the profession of athletic training.

Figure 3

Participants by Ethnicity



Note. This figure illustrates the athletic training students sample surveyed in this study by ethnicity.

Discussion of the findings

The following sections outline the findings of this study. The results of the aforementioned statistical analyses are presented, followed by a discussion and interpretation. The following sections answer the research questions examined by this study. The impact of these findings on the profession of athletic training and athletic training education are also discussed.

Normality

Data was analyzed for normal distribution. The sample of 658 athletic training students reflected a near normal distribution. Normally distributed data indicates that 95% of the values fall within a standard deviation of the mean, creating a bell-shaped curve when graphed on a histogram (Portney, 2020). Several statistical tests, such as the Shapiro-Wilk test and Kolmogorov-Smirnov test, exist as formal mathematical analyses that examine the normal distribution of a data set (Kim, 2013). Statistical normality tests are typically used in study designs that include small to medium sample sizes, however these statistical tests may be unreliable or insufficient in determining normality in large sample sizes (Kim, 2017; Delice, 2010). Therefore, this study determined that the ATS sample collected was a normal distribution by applying the central limit theorem, analyzing the histograms for each variable, and assessing the skewness and kurtosis (Cronk, 2019; Portney, 2020).

The central limit theorem states that a large random sample taken from a defined population is assumed normally distributed (Kwak & Kim, 2017). Based on the mathematical construct of the central limit theorem, a random sample greater than 30 will be representative of the population (Kwak & Kim, 2017). Therefore, the 658 random surveys collected from a population of athletic training students represents a near normal distribution.

The skewness and kurtosis for EI scores are presented in Table 11. Skewness values that exceed -0.5 or 0.5 are considered asymmetrical or abnormally distributed (Bai & Ng, 2005; Kim, 2013). Likewise, kurtosis values that exceed -1 or +1 are considered too peaked or abnormally distributed (Bai & Ng, 2005; Kim, 2013). In this study, the skewness and

kurtosis fall within these guidelines indicating that the data is normally distributed. Therefore, the sample collected in this study is assumed near normal distribution.

Internal Consistency

The internal consistency between GEII item responses was calculated to determine if the GEII was a reliable measurement of EI skills in athletic training students. The internal reliability of the athletic training students' EI scores was calculated using the Cronbach's alpha test for each independent variable, reliability coefficients are presented in Table 9. Reliability was analyzed to ensure that the sample demonstrated internal consistencies similar to reliability reported by the Genos normative sample. Cronbach's alpha is a statistical analysis used to examine the internal consistency between sample responses (Cronk, 2019; Tavakol & Dennick, 2011). Reliability coefficients close to 1 indicate strong internal consistency, while values close to zero have poor internal consistency (Cronk, 2020). Reliability coefficients below 0.3 are very weak, while values above 0.70 are considered strong (Clark & Watson, 1995; Peterson, 1994).

Athletic training students demonstrated moderate to strong internal consistency across all EI scores (Table 10). The reliability of total EI scores in athletic training student ($\alpha = 0.90$) is consistent with previously published research on nursing ($\alpha = 0.87$), dentistry ($\alpha = 0.88$), and pharmacy ($\alpha = 0.91$) students (Foster et al., 2018). Furthermore, the internal consistency of total EI scores in athletic training students were comparable to published Genos normative data for general population sample ($\alpha = 0.96$). Internal consistency between EI factor scores were slightly lower ($\alpha = 0.60$ to 0.69) compared to Genos normative data ($\alpha = 0.71$ to 0.75), however the EI scores demonstrated at least moderate reliability across EI factors. Overall, the 31-item GEII-Concise Version demonstrated moderate factor reliability and strong

total EI reliability in the measurement of behaviors associated with EI skills among athletic training students.

Table 10

Internal Consistency of Emotional Intelligence Scores

Score	Cronbach's Alpha (a)
Emotional Self-Awareness (ESA)	0.60
Emotional Expression (EE)	0.64
Emotional Awareness of Others (EAO)	0.65
Emotional Reasoning (ER)	0.69
Emotional Self-management (ESM)	0.61
Emotional Management of others (EMO)	0.60
Emotional Self-control (ESC)	0.64
Intrapersonal EI	0.84
Interpersonal EI	0.81
Total EI	0.90

EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table displays the results of the Cronbach's internal reliability statistical test. The Cronbach's alpha values are provided for each independent variable.

Emotional Intelligence and Athletic Training Students

The descriptive statistics for total emotional intelligence and the seven factor scores are presented in Table 11. The descriptive statistics for undergraduate and graduate athletic training students are presented in Table 12 and Table 13, respectively. The GEII was able to measure the frequency that athletic training students demonstrate behaviors associated with emotional

intelligence. Athletic training students' EI scores were normally distributed. The 31-item GEII Concise Version was completed online and took an average of 7 minutes to complete, making the instrument an efficient methodology to assess EI skills in athletic training students.

Table 11

Professional AT Student Emotional Intelligence Scores (n=658)

	M	SD	SE	Skew	Kurtosis
Total EI	121.50	12.65	0.493	-0.27	-0.05
ESA	16.30	2.17	0.084	-0.51	0.54
EE	18.86	3.00	0.117	-0.48	0.16
EAO	16.40	2.12	0.082	-0.43	0.42
ER	19.34	2.65	0.103	-0.45	0.79
ESM	19.15	2.85	0.111	-0.36	-0.001
EMO	15.61	2.22	0.086	-0.34	0.08
ESC	15.84	2.35	0.091	-0.46	-0.02

M = mean; SD = standard deviation; SE = standard error; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table presents the means, deviations, standard error, skewness, and kurtosis for total emotional intelligence scores and the seven emotional intelligence factor scores among 658 athletic training students.

Table 12

Graduate AT Student Emotional Intelligence Scores (n=187)

	M	SD	SE	Skew	Kurtosis
Total EI	121.30	12.38	0.91	-0.12	-0.39
ESA	16.40	1.94	0.14	-0.06	-0.65
EE	18.62	2.88	0.21	-0.44	0.13
EAO	16.28	2.04	0.15	-0.34	0.03
ER	19.34	2.61	0.19	-0.05	-0.09
ESM	19.20	2.79	0.20	-0.55	0.32
EMO	15.46	2.26	0.17	-0.15	-0.27
ESC	16.01	2.25	0.17	-0.34	-0.33

M = mean; SD = standard deviation; SE = standard error; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table presents the means, deviations, standard error, skewness, and kurtosis for total emotional intelligence scores and the seven emotional intelligence factor scores among 187 graduate athletic training students.

Table 13

Undergraduate AT Student Emotional Intelligence Scores (n=471)

	M	SD	SE	Skew	Kurtosis
Total EI	121.58	12.77	0.59	-0.33	0.08
ESA	16.27	2.25	0.10	-0.62	0.70
EE	18.95	3.05	0.14	-0.50	0.20
EAO	16.45	2.15	0.10	-0.45	0.55
ER	19.34	2.67	0.12	-0.58	1.13
ESM	19.13	2.87	0.13	-0.29	-0.10
EMO	15.68	2.20	0.10	-0.42	0.28
ESC	15.78	2.38	0.11	-0.49	0.05

M = mean; SD = standard deviation; SE = standard error; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table presents the means, deviations, standard error, skewness, and kurtosis for total emotional intelligence scores and the seven emotional intelligence factor scores among 471 undergraduate athletic training students.

Emotional Intelligence and Degree Level

An independent t-test was calculated comparing the mean scores of undergraduate and graduate total EI and seven sub-factor EI scores. The means, standard deviations, significance, and effect size for undergraduate and graduate EI scores is presented in Table 14. No statistical difference was found between undergraduate and graduate athletic training students. The mean total EI score of undergraduate athletic training students (M = 121.58, sd = 12.77) was not significantly different from the mean of graduate athletic training students (M = 121.30 sd = 12.38).

Table 14 *Difference Between Undergraduate and Graduate Emotional Intelligence Scores*

	BSAT		MSAT			
	M	SD	M	SD	*p value*	Effect Size
Total EI	121.58	12.77	121.30	12.38	0.80	0.02
ESA	16.27	2.25	16.40	1.94	0.49	-0.06
EE	18.95	3.05	18.62	2.88	0.21	0.11
EAO	16.45	2.15	16.28	2.04	0.37	0.08
ER	19.34	2.67	19.34	2.61	0.98	0.001
ESM	19.13	2.87	19.20	2.79	0.75	-0.03
EMO	15.68	2.20	15.46	2.26	0.26	0.10
ESC	15.78	2.38	16.01	2.25	0.27	-0.10

*p>0.05; M = mean; SD = standard deviation; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table shows the results of an independent t test comparing undergraduate and graduate emotional intelligence scores.

The results of this study found no significance difference in mean EI scores between undergraduate and graduate students. Athletic training students at both the undergraduate and graduate level demonstrate behaviors associated with EI skills at a similar frequency. These findings are inconsistent with previously published EI research that reports older students may demonstrate high levels of EI (Gignac, 2010). In comparison to this study, previous research samples included a larger range of ages which may have contributed to significant findings between undergraduate and graduate students' samples. The mean undergraduate student age (M = 21.02, sd = 1.53) and the mean age of graduate students (M = 23.30 ,sd = 1.82) were similar. The relatively low variance in the sample age impacted the overall range of included athletic

training students. Despite previous research and anecdotal beliefs, there is no difference between the EI skills in undergraduate and graduate athletic training students.

Emotional intelligence and Age

A Pearson correlation was calculated to examine the relationship between age and emotional intelligence. The correlation coefficients (r) and significance levels ($p > 0.05$) are presented in Table 15. A weak correlation that was not significant was found between age and EI scores. Age is not correlated with EI scores in athletic training students.

Previous research on the relationship between age and emotional intelligence skills inconsistent. A correlation between EI skills and age has been reported among healthcare professional (Coskun et al., 2018; Weng et al., 2008). Foster (2018) reported a weak positive correlation with no significance between age and emotional intelligence in healthcare students using the GEII (Foster et al, 2018). A systematic review of emotional intelligence skills in healthcare professionals reported conflicting evidence regarding the relationship between age and EI skills (Arora et al., 2010). The positive correlations between EI scores and age in previous studies examined an age range much larger than the present study. The mean age of the sample in this study (M = 21.67, sd = 1.92) was closely grouped within a low standard deviation and range. Previous studies that found a significant correlation between age and EI included a much larger sample size and age range (Gignac, 2010; Palmer et al., 2009).

Table 15

Emotional Intelligence and Age

	Total EI	ESA	EE	EAO	ER	ESM	EMO	ESC
r	0.06	0.07	-0.00	0.07	0.05	0.06	-0.01	0.07
p	0.14	0.06	0.97	0.06	0.23	0.16	0.98	0.09

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

**Correlation is significant at the 0.01 level (2-tailed).

Note. This table shows the correlation coefficients and significance levels for the Pearson correlation test between age and emotional intelligence scores.

Emotional Intelligence and Gender

An independent t test was calculated comparing the mean EI scores of male and female athletic training students. The means, standard deviations, and p values are presented in Table 16. A comparison of the means found a significant difference between EI scores in female and male athletic training students. Female athletic training student demonstrate behaviors associated with emotional intelligence more frequently compared to their male peers. The mean total EI score of the entire female sample was significantly higher than the male sample. At the undergraduate level, the mean total EI scores among females was significantly higher than the undergraduate male sample. At the graduate level, no significant difference between mean EI scores between males was found. ($p = 0.58$), however females average EI scores were higher than males.

The results of this study were consistent with previous research indicating that females demonstrate higher levels of EI compared to their male peers (Arora et al., 2010; Foster et al, 2018). Females may be more likely to enter a healthcare field due a natural instinct to care for others, understand emotions, and demonstrate empathy (Arora et al., 2010). Within athletic

training the increasing number of females becoming athletic trainers may mean that more athletic trainers will demonstrate behaviors associated with EI more frequently in the delivery of patient care.

Table 16

Difference between Male and Female Emotional Intelligence Scores

	BSAT		MSAT		Total	
	M	SD	M	SD	M	SD
Male EI Score	119.37	13.56	120.42	13.33	119.66	13.46
Female EI Scores	122.33	12.42	121.58	12.09	122.12	12.32
P value	0.03*		0.58		0.03*	
Effect size	0.23		0.09		0.20	

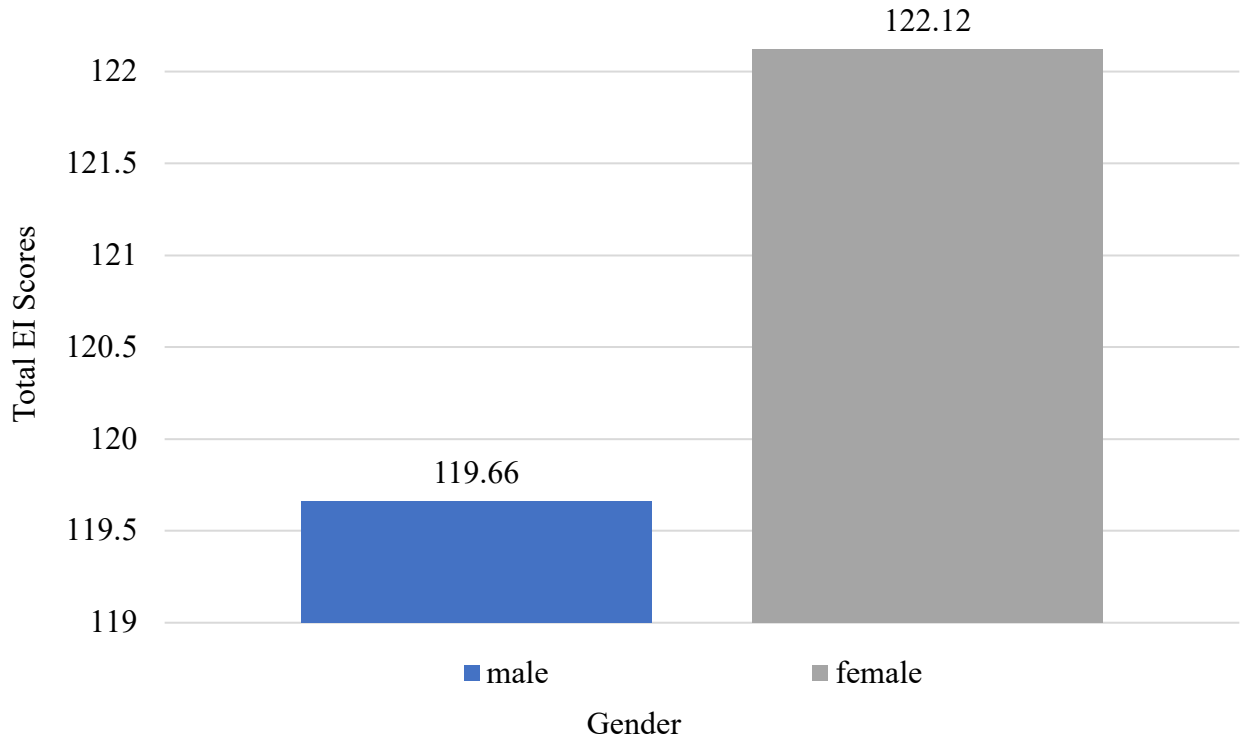
*p < 0.05 level; **p < 0.01; BSAT = undergraduate athletic training students; MSAT = graduate athletic training students; M = mean; SD = standard deviation

Note. This table displays the mean and standard deviations for undergraduate, graduate, and all athletic training students examined in this study. Female athletic training students demonstrate EI skills more frequently than their male peers.

*Female total emotional intelligence scores were significantly different with females demonstrating EI skills more frequently compared to males.

Figure 4

Emotional Intelligence Scores by Gender



Note. This figure shows the difference in total emotional intelligence scores of male and female athletic training students. Female athletic training students demonstrate behaviors associated with EI skills significantly more often than their male peers.

Emotional Intelligence and Grade Point Average

A Pearson correlation was calculated to examine the relationship between grade point average (GPA) and EI scores. The correlation coefficients (r) and significance levels ($p > 0.05$) are presented in Table 17. A weak positive correlation that was found, indicating a significant linear relationship between GPA and EI scores. An athletic training student with a higher EI scores may achieve more favorably academic performance. EI factor scores were also examined for the existence of a relationship. A weak positive relationship between Emotional Self-

Awareness, Emotional Expression, and Emotional Self-Control factor scores and GPA was found in undergraduate and the overall ATS sample. However, no relationship was found between graduate ATS EI scores and GPA.

Table 17

Emotional Intelligence and Grade Point Average

		Total EI	ESA	EE	EAO	ER	ESM	EMO	ESC
All AT Students									
	r	0.09	0.08	0.09	0.04	0.07	0.05	-0.01	0.104
	p	0.03*	0.04*	0.02*	0.312	0.06	0.23	0.94	0.01**
Undergraduate									
	r	0.124	0.12	0.12	0.08	0.12	0.04	0.04	0.11
	p	0.01**	0.02*	0.01**	0.09	0.01**	0.35	0.45	0.02*
Graduate									
	r	0.1	-0.03	0.07	-0.03	-0.05	0.07	-0.07	0.08
	p	0.89	0.66	0.36	0.68	0.46	0.37	0.38	0.31

*Correlation is significant at the 0.05 level (2-tailed).; **Correlation is significant at the 0.01 level (2-tailed).
M = mean; SD = standard deviation; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table displays the relationship between emotional intelligence scores and grade point average of undergraduate, graduate, and all athletic training student.

*A weak positive correlation between athletic training student's emotional intelligence scores and grade point average is appreciated.

Previous research has established a positive correlation between EI skills and academic performance (Libbrecht, Lievens, Carette, & Cote, 2014; Haralur, Majeedm Afzal, & Chaturvedi, 2019). The ability to demonstrate behaviors associated with EI may serve as a predicator of future academic and clinical success. The results of this study provide evidence that

academic performance of athletic training students may be influenced by their ability to demonstrate behavior associated with EI skills. The early and frequent assessment of EI skills may provide athletic training educators with a novel instrument to predict future success, as well as monitor EI skill development over time.

Emotional Intelligence and Clinical Experience

An independent t-test was calculated comparing the mean EI scores of athletic training students with less than 500 clinical experience hours and athletic training students with more than 501 clinical experience hours. The means, standard deviations, and p values are presented in Table 18. The analysis found a significant difference between total EI scores and several EI factor scores based on clinical hours completed. Athletic training students with more than 501 clinical experience hours reported demonstrating behaviors associated with EI are a higher frequency compared to their peers who completed less than 500 clinical experience hours. Mean total EI scores (M = 122.36, sd = 12.85) in students with more than 501 clinical experience hours were significantly different from mean total EI scores (M = 120.32, sd = 12.30) in students with less than 500 clinical experience hours. Furthermore, athletic training students that completed more than 500 clinical experience hours reported higher scores in emotional self-awareness and emotional awareness of others compared to their peers. Athletic training students with more than 501 clinical experiences hours completed demonstrate behaviors associated with EI skills more often than their peers with less than 500 clinical experiences hours. The results of this study indicated that athletic training students may develop EI skills over time and demonstrate more EI behaviors as they complete clinical experience hours.

Table 18

Clinical Experience Hours and Emotional Intelligence (n=658)

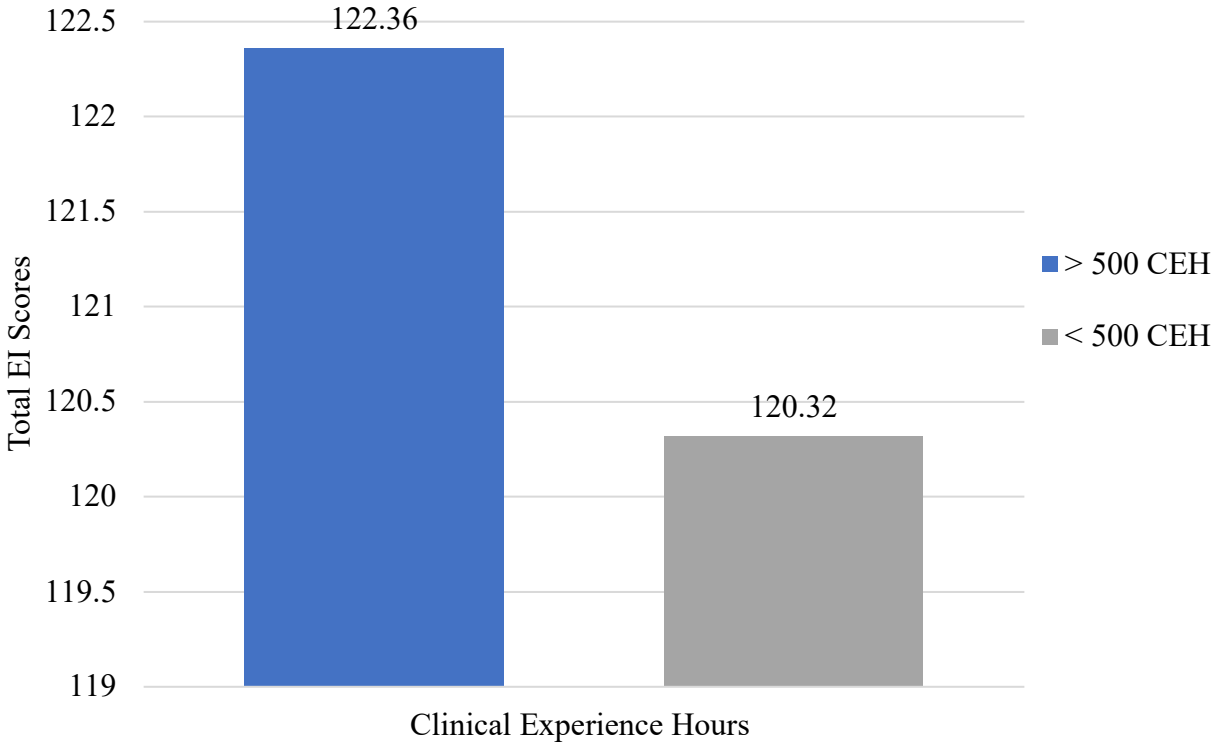
	Total EI	ESA	EE	EAO	ER	ESM	EMO	ESC
> 500 CEH	122.36 (12.85)	16.49 (2.17)	18.98 (2.98)	16.57 (2.20)	19.50 (2.72)	19.18 (2.74)	15.70 (2.32)	15.95 (2.36)
< 500 CEH	120.32 (12.30)	16.04 (2.14)	18.69 (3.03)	16.17 (1.97)	19.12 (2.54)	19.10 (2.99)	15.49 (2.06)	15.70 (2.32)
P value	0.04*	0.01**	0.23	0.02*	0.07	0.70	0.23	0.19
ES	0.16	0.21	0.10	0.19	0.14	0.03	0.09	0.10

*p < 0.05 level; **p < 0.01; CEH = clinical experience hours; M = mean; SD = standard deviation; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table shows the mean, standard deviation, p values, and effect size for emotional intelligence scores and factor scores for athletic training students with more than 500 clinical experience hours and athletic training students with less than 50 clinical experience hours. Athletic training students who have completed more than 500 clinical experiences hours demonstrate significantly more behaviors associated with emotional intelligence skills compared to student with less than 500 clinical experience hours.

Figure 5

Emotional Intelligence by Clinical Experience Hours



Note. This figure illustrates the difference between total emotional intelligence scores among athletic training students with more than and less than 500 clinical experience hours.

Emotional Intelligence compared to Genos Normative Data

A one-sample *t* test was calculated comparing the mean total EI scores and EI factor scores to the Genos normative values. Demographic information regarding the Genos normative data sample (n = 4,775) is presented in Table 19. No significant difference was found between total EI scores, Emotional Expression, and Emotional Self-control. The means, standard deviations, and significance levels for undergraduate, graduate, and all athletics training students are displayed in Table 20. The sample means for total EI (M = 121.50, *sd* = 12.65), emotional

expression (M = 18.86, sd = 3.00), and emotional self-control (M = 15.84, sd = 2.35) were not significantly different than the Genos normative mean.

Table 19

Genos Emotional Intelligence Normative Data

Sample		4775
Gender (%)		
	Male	2526 (53%)
	Female	2244 (47%)
Age (years)		
	Mean (SD)	41.5 (9.62)
	Birth year range	1955-1976
Education (%)		
	Bachelor's degree or higher	3266 (68.4%)
	Grade 12/post-secondary cert.	1203 (25.2%)
	Grade 11 or lower	304 (6.4%)
GEII Scores M(sd)		
	Total EI	121.86 (13.84)
	ESA	16.60 (4.79)
	EE	18.89 (8.59)
	EAO	16.01 (4.68)
	ER	20.16 (6.5)
	ESM	18.65 (7.94)
	EMO	15.80 (5.23)
	ESC	15.75 (5.89)
Intrapersonal EI		69.89 (6.80)
Interpersonal EI		51.97 (5.52)

M = mean; SD = standard deviation; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

Note. This table displays demographic information and emotional intelligence scores for the Genos Emotional Intelligence Inventory normative sample data. The information in this table is

adapted from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

Table 20

Athletic Training Student EI Scores compared to Genos Normative Data

	GEII	BSAT		MSAT		Total	
	M (SD)	M (SD)	P	M (SD)	p	M (SD)	p
Total EI	121.86 (13.84)	121.58 (12.77)	0.64	121.30 (12.38)	0.54	121.50 (12.65)	0.47
ESA	16.60 (4.79)	16.27 (2.25)	0.00**	16.40 (1.94)	0.15	16.30 (2.17)	0.00**
EE	18.89 (8.59)	18.95 (3.05)	0.67	18.62 (2.88)	0.20	18.86 (3.00)	0.77
EAO	16.01 (4.68)	16.45 (2.15)	0.00**	16.28 (2.04)	0.05*	16.40 (2.12)	0.00**
ER	20.16 (6.5)	19.34 (2.67)	0.00**	19.34 (2.61)	0.00**	19.34 (2.65)	0.00**
ESM	18.65 (7.94)	19.13 (2.87)	0.00**	19.20 (2.79)	0.01**	19.15 (2.85)	0.00**
EMO	15.80 (5.23)	15.68 (2.20)	0.22	15.46 (2.26)	0.04*	15.61 (2.22)	0.03*
ESC	15.75 (5.89)	15.78 (2.38)	0.79	16.01 (2.25)	0.12	15.84 (2.35)	0.31

*p < 0.05 level; **p < 0.01; BSAT = undergraduate athletic training students; MSAT = graduate athletic training students; M = mean; SD = standard deviation; EI = emotional intelligence; ESA = Emotional Self-Awareness; EE = Emotional Expression; EAO = Emotional Awareness of Others; ER = Emotional Reasoning; ESM = Emotional Self-Management; EMO = Emotional Management of Others; ESC = Emotional Self-Control

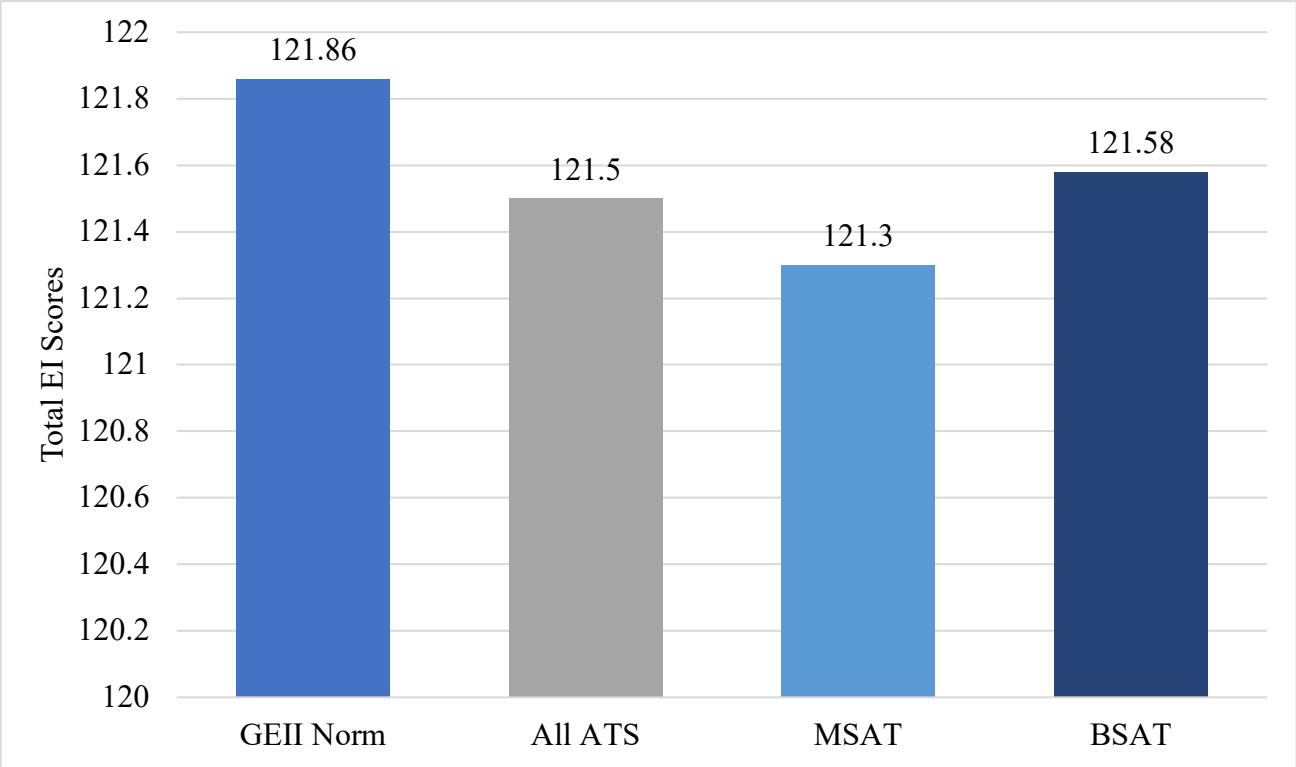
Note. This table shows mean total EI scores and factor scores compared to the Genos normative sample data. The information in this table is adapted from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The mean total EI scores of athletic training students was lower compared to Genos Normative Data. Previous research found a significant difference between the total EI mean of healthcare students to the Genos Normative sample (Foster et al., 2018). Total EI scores were lower in healthcare students concluding that current college-aged students demonstrate behaviors associated with EI less frequently. In practical application and interpretation of the GEII for

longitudinal assessment of EI skills, a change of >0.5 is considered a clinically meaningful change or difference in EI skills. Therefore, despite statistical results, athletic training students demonstrate behaviors less frequently. Based on the results of the present study athletic training students may demonstrate behaviors associated with EI skills below or above previous generational normative data.

Figure 6

Total Emotional Intelligence Scores



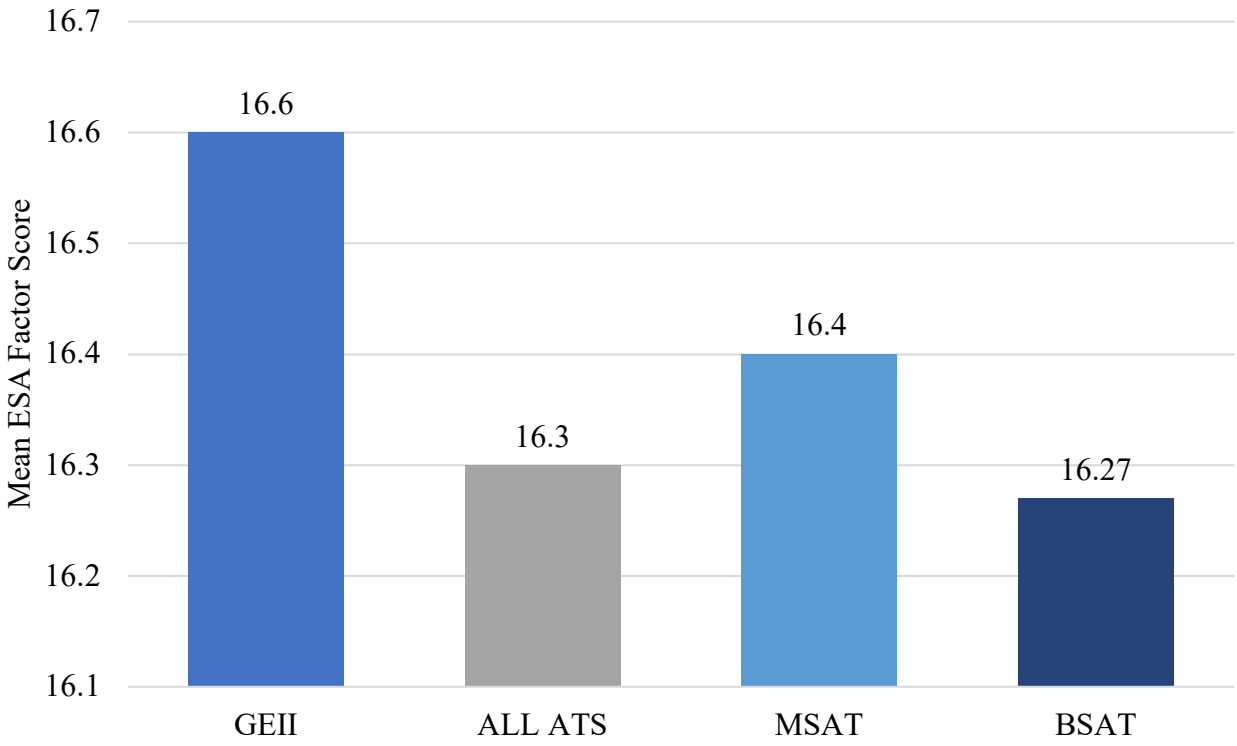
Note. This figure displays athletic training student total emotional intelligence scores and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

A series one-sample *t* tests were calculated comparing the mean EI factor scores to the Genos normative values. A significant difference was found between several EI factor scores and the normative values. A significant difference was found between Emotional Self-Awareness, Emotional Awareness of Others, Emotional Reasoning, Emotional Self-management, and Emotional Management of Others. The mean Emotional Self-Awareness (M = 16.30, sd = 2.17), Emotional Reasoning (M = 19.34, sd = 2.65), and Emotional Management of Others (M = 15.61, sd = 2.22) scores were significantly lower than the Genos normative mean. The mean Emotional Awareness of Others (M = 16.40, sd = 2.12) and Emotional Self-Management (M = 19.15, sd = 2.85) scores were significantly higher than the Genos normative means. Emotional intelligence factor scores provide insight into how an individual identifies, regulates and utilizes emotions when working with colleagues and patients.

The Emotional Self-Awareness factor mean (M = 16.30, sd = 2.17) was significantly lower than the Genos normative mean. The emotional self-awareness factor score is a measure of the relative frequency that an individual consciously identifies emotions, demonstrates awareness of how emotions influence thoughts, and their perception of these behaviors (Gignac, 2010). The GEII Concise version examines both positive and negative behaviors associated with an individual's emotional self-awareness (Gignac, 2010). High scores indicate a frequent awareness of emotions and emotional triggers, as well as the impacts emotions have on thoughts, decisions, and behavior (Gignac, 2010). Athletic training students demonstrate less behaviors associated with self-awareness of their own emotions compared to previous generations sampled in the Genos normative data.

Figure 7

Emotional Self-Awareness Factor Scores



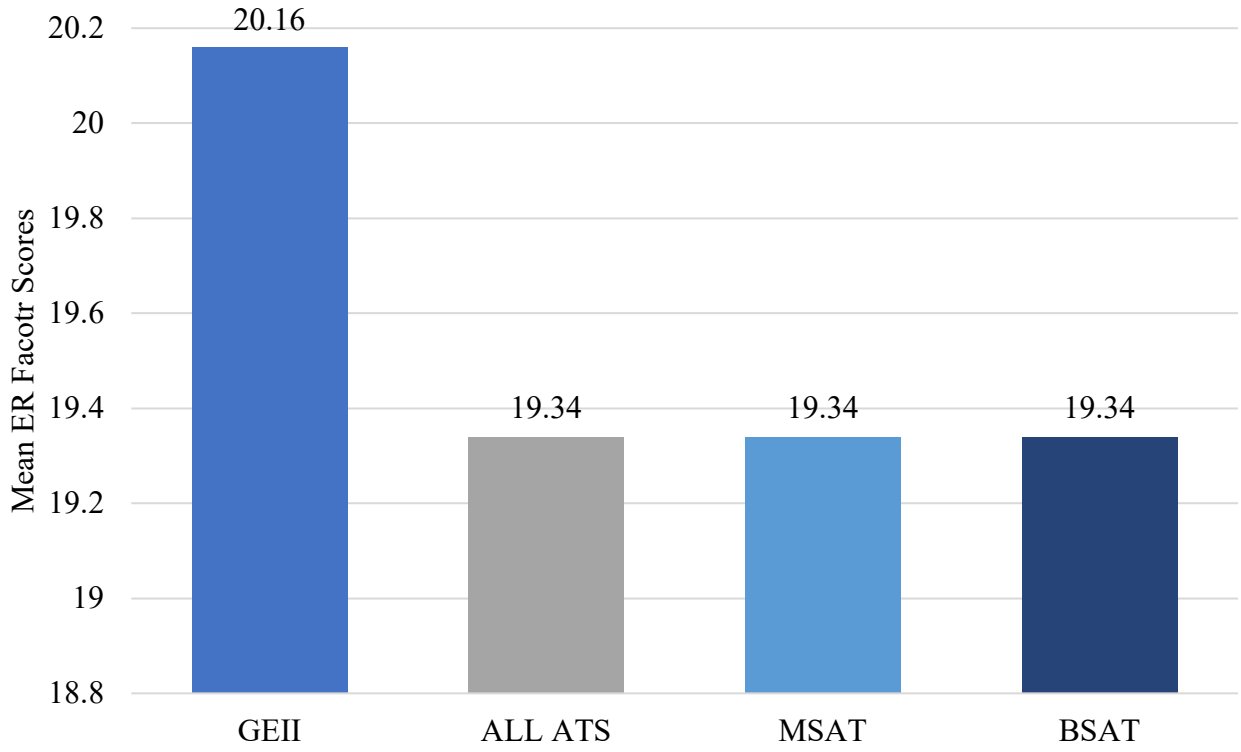
Note. This figure displays athletic training student emotional intelligence factor scores related to emotional self-awareness and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The mean Emotional Reasoning (M = 19.34, sd = 2.65) score was significantly lower than the Genos normative mean. The emotional reasoning factor score is a measure of how frequently an individual integrates emotional information to make decisions and solve problems. Furthermore, the emotional reasoning items are designed to capture how often an individual considers their own and the emotions of others for the successfully engage and influence the people around them (Gignac, 2010). High emotional reasoning scores indicate an individual

frequently considers both their own and other's emotions when making decisions and demonstrates these actions to others (Gignac, 2010). Athletic training students demonstrate less behaviors associated with emotional reasoning compared to previous generations sampled in the Genos normative data.

Figure 8

Emotional Reasoning Factor Scores

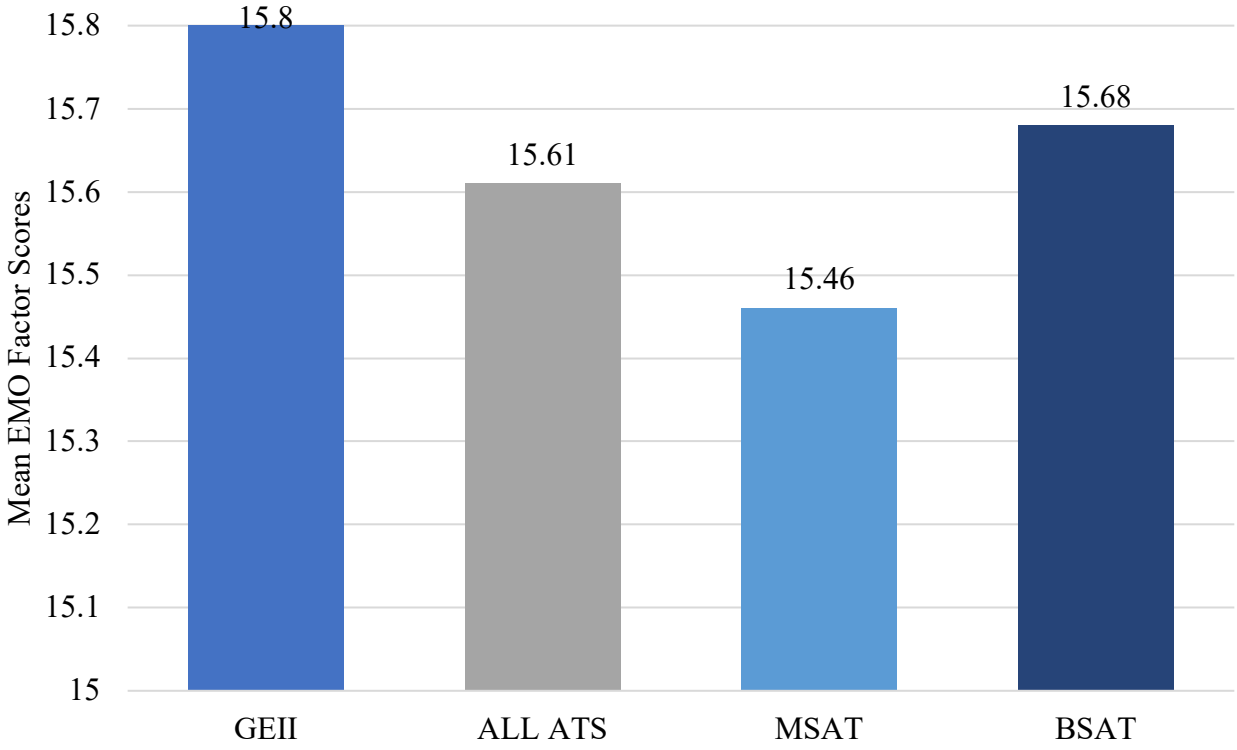


Note. This figure displays athletic training student emotional intelligence factor scores related to emotional reasoning and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The mean Emotional Management of Others (M = 15.61, sd = 2.22) score was significantly lower than the Genos normative mean. The emotional management of others factor score is a measure of how frequently an induvial uses emotional information in successfully influencing others (Gignac, 2010). Behaviors captured include conscious actions to motivate colleagues or patients which are demonstrated by the strategic management of others emotions to prevent and resolve stressful situations or distress, create a positive environment, and influence outcomes (Gignac, 2010). High emotional management of others suggests the ability to create and maintain an emotionally positive environments for others, as well as effectively helping colleagues and patients prevent or resolve issues that may negatively affect well-being, performance, or outcomes (Gignac, 2010). Athletic training students demonstrate less behaviors associated with emotional management of others compared to previous generations sampled in the Genos normative data.

Figure 9

Emotional Management of Others Factor Scores



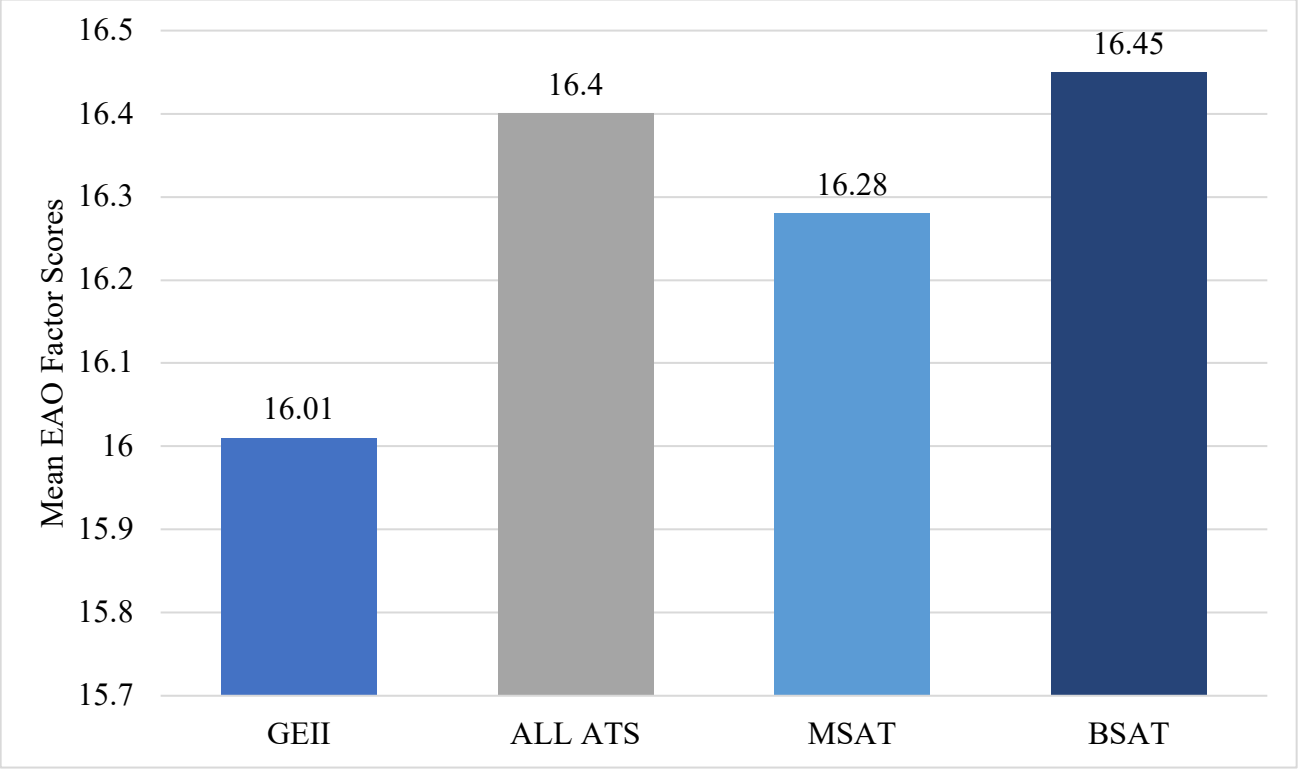
Note. This figure displays athletic training student emotional intelligence factor scores related to emotional management of others and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The mean Emotional Awareness of Others (M = 16.40, sd = 2.12) score was significantly higher than the Genos normative mean. The emotional awareness of others factor score measures the frequency an individual is able to accurately identify and interpret verbal and non-verbal expression of emotions communicated by colleagues and patients (Gignac, 2010). High emotional awareness factor scores suggest the individual frequently and accurately recognizes

the verbal and non-verbal expression of emotions and identifies potential causes (Gignac, 2010). In patient care, these skills are fundamental to demonstrating empathy (Arora et al., 2011). Athletic training students demonstrate behaviors associated with emotional awareness of others more often compared to previous generations sampled in the Genos normative data.

Figure 10

Emotional Awareness of Others Factor Scores

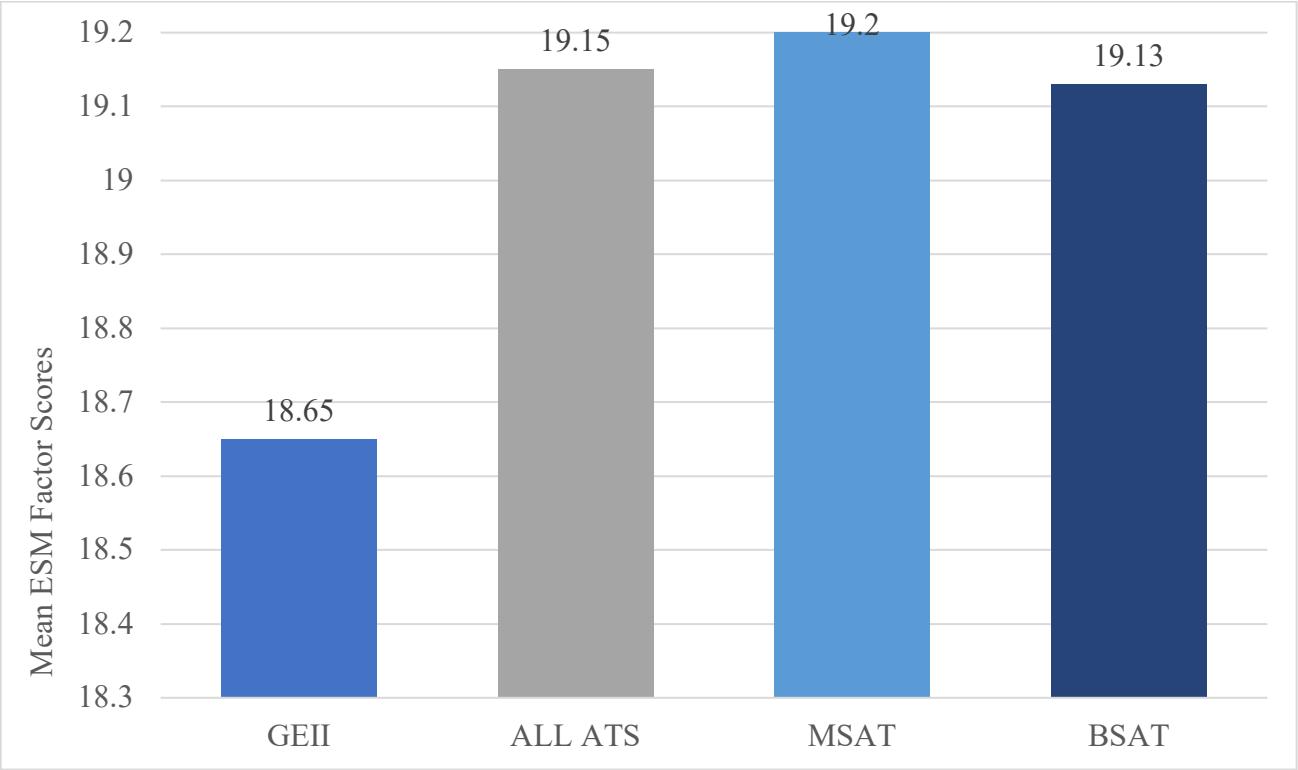


Note. This figure displays athletic training student emotional intelligence factor scores related to emotional awareness of others and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The mean Emotional Self-Management (M = 19.15, sd = 2.85) score was significantly higher than the Genos normative mean. The emotional self-management factor score measures the frequency an individual successfully manages their own emotions in response to both positive and negative workplace situations (Gignac, 2010). The ESM items capture an individual's ability to successfully navigate positive and more importantly negative emotional situations without adverse effects on performance (Gignac, 2010). High emotional self-management scores indicate an active engagement in developing emotional management in oneself, as well as a relative ability to manage the extreme levels of positive and negative emotions (Gignac, 2010). Athletic training students demonstrate behaviors associated with emotional self-management more often compared to previous generations sampled in the Genos normative data.

Figure 11

Emotional Self-Management Factor Scores



Note. This figure displays athletic training student emotional intelligence factor scores related to emotional self-management and the Genos normative sample total emotional intelligence scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

The Genos Emotional Intelligence Inventory - Concise Version was sensitive enough to identify difference in emotional intelligence in athletic training students. A sample of 658 athletic training students revealed no significant different between total EI scores compared to Genos normative data. However, it must be noted that on average total EI scores were lower in athletic training students compared to the Genos sample. Single-sample *t* tests comparing each EI factor score to the Genos normative data found significant differences between ESA, EAO, ER, ESM, and EMO. Athletic training students demonstrate behaviors associated with ESA, ER, and EMO less often than the normative sample of a previous generation. These results provide insight for athletic training faculty and clinical preceptors may need to focus EI skill development, assessment, and feedback in these factors. Individuals who lack emotional self-awareness and emotional reasoning may allow emotional situations to negatively affect their thoughts, decisions, performance, and/or behaviors during patient care and other workplace interactions.

On the contrary, athletic training students demonstrate behaviors associated with EAO and ESM more frequently compared to the Genos sample. These results provide important insight into behaviors athletic training students perform at a higher rate compared to previously reported data. EI factor scores in emotional awareness of others may be higher in athletic training students, because as healthcare professionals the ability to demonstrate empathy is fundamental to patient care and is derived from one's ability to recognize emotions in others. The assessment of emotional awareness of others, in part, can be used by educators in their efforts to assess if an individual possesses the EI skills need to demonstrate empathy in patient care. Furthermore, athletic training students demonstrated higher frequencies in EI skills related to emotional self-management. These results may indicate that athletic training students regulate their emotions

well in both positive and negative situations. Although EI factor scores provide valuable insight into the behaviors associated with each specific factor, EI skill assessment should be viewed from a more global lens of the individual's ability to demonstrate these skills. Educators should not use the GEII as an instrument to assess graded performance, rather the GEII should be used to identify areas of development through strategic development over time.

Athletic Training Student Emotional Intelligence Percentiles

SPSS was used to calculate percentiles to categorically interpret future emotional intelligence scores among athletic training students. The percentiles, scores, and qualitative interpretation of emotional intelligence are presented in Table 21. The mean of total emotional intelligence score represents the 50th percentile (Cronk, 2019). An emotional intelligence score in the 50th percentile indicates that the athletic training student demonstrates behaviors associated with EI at an average frequency compared to the sample population. The percentiles are designed to be used as a benchmarking instrument and should not be used to assess or rank scores between individuals.

Table 21

Interpretation Total EI Scores for Athletic Training Student

Percentile	EI Score	*Qualitative	*Description
95th	142.00	Very High	Very high frequency of demonstrating EI behaviors
90th	138.00		
75th	130.00	High	High frequency of demonstrating EI behaviors
50th	122.00	Average	Average frequency of demonstrating EI behaviors
25th	112.75	Low	Low frequency of demonstrating EI behaviors
10th	104.00	Very Low	Very low frequency of demonstrating EI behaviors
5th	100.00		

Note. This table displays percentile scores for total emotional intelligence scores for athletic training students. The percentile scores serve as individual benchmarking, rather than a comparison between athletic training students. The qualitative and descriptive interpretations are adapted from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

Interpersonal and Intrapersonal Emotional Intelligence

A one-sample t test was calculated comparing interpersonal and intrapersonal emotional intelligence scores to the Genos normative data. Means, standard deviations, and significance levels are presented in Table 22. No significant difference was found between intrapersonal intelligence scores and the Genos sample. The mean intrapersonal EI score (M = 70.15, *sd* = 8.27) athletic training students demonstrated similar levels of intrapersonal EI skills. A significant difference was found between interpersonal emotional intelligence scores and the Genos sample. Athletic training students interpersonal EI scores (M = 51.35, *sd* = 5.75) were significantly lower than the Genos sample. Athletic training students may demonstrate fewer behaviors associated with emotional intelligence skills that involve their interaction with others.

Table 22

Intrapersonal and Interpersonal EI compared to Genos Normative Data

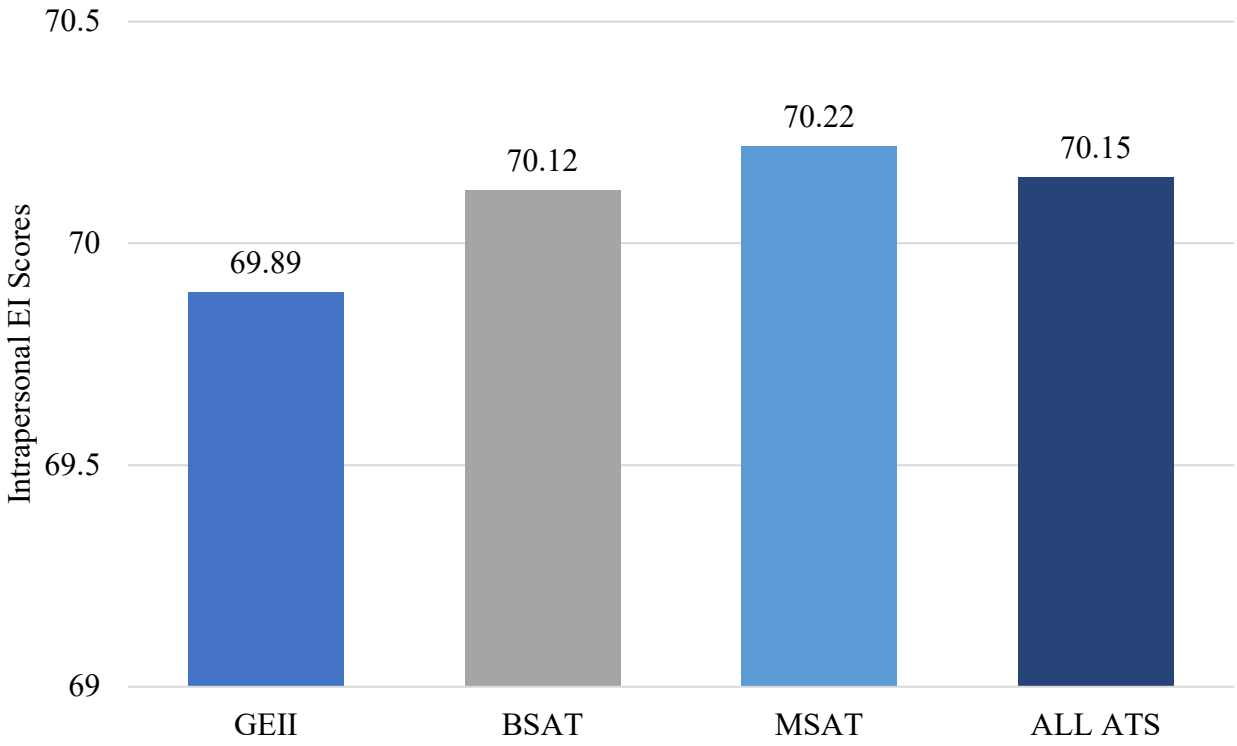
	GEII	BSAT		MSAT		Total	
	M (SD)	M (SD)	p	M (SD)	p	M (SD)	p
Intrapersonal EI	69.89 (6.80)	70.12 (8.39)	0.55	70.22 (7.97)	0.57	70.15 (8.27)	0.42
Interpersonal EI	51.97 (5.52)	51.46 (5.73)	0.05*	51.08 (5.70)	0.03*	51.35 (5.72)	0.01**

*p < 0.05 level; **p < 0.01; BSAT = undergraduate; MSAT = graduate; 1 level, M = mean; SD = standard deviation; EI = emotional intelligence; GEII = Genos Emotional Intelligence Inventory

Note. This table displays the comparison between intrapersonal emotional intelligence and interpersonal emotional intelligence scores in athletic training students. Athletic training students demonstrate significantly lower interpersonal emotional intelligence skills compared to the Genos normative sample. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

Figure 12

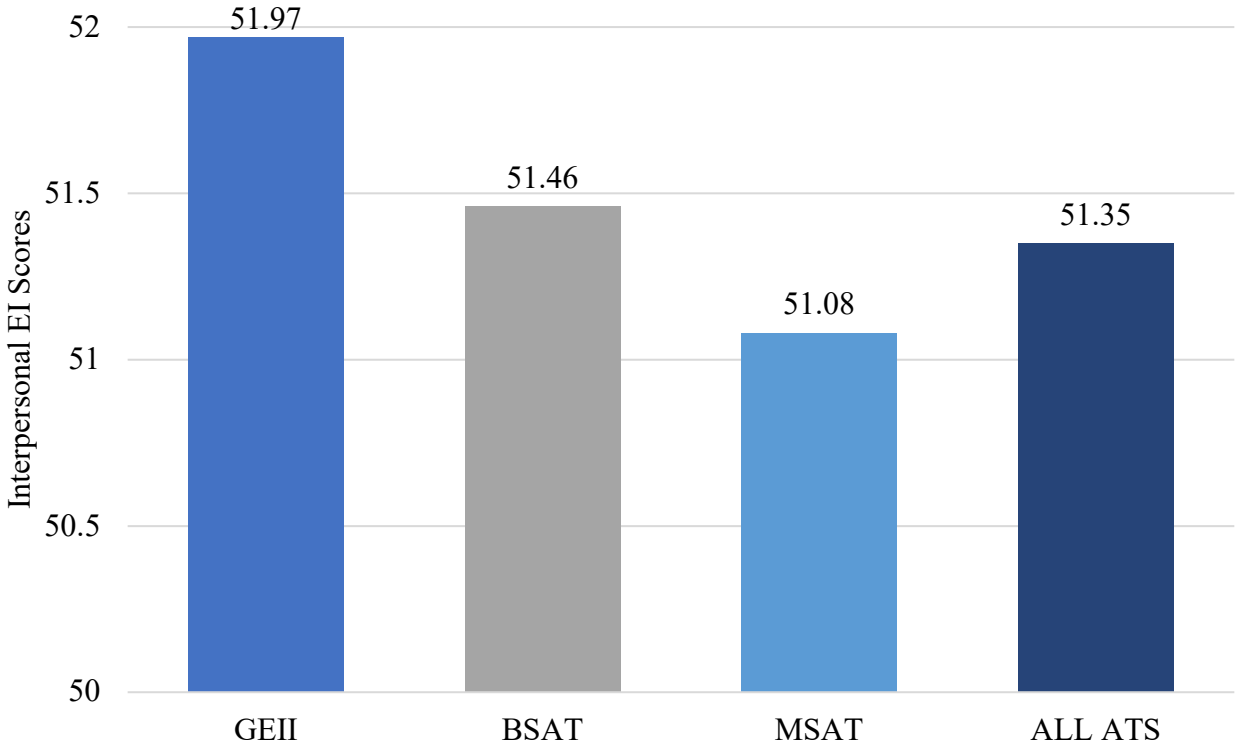
Intrapersonal Emotional Intelligence Scores



Note. This figure displays athletic training student intrapersonal emotional intelligence compared to the Genos normative sample scores. No significant difference was found between athletic training students and normative sample, however athletic training students mean scores are higher than the normative sample. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

Figure 13

Interpersonal Emotional Intelligence Scores



Note. This figure displays athletic training student interpersonal emotional intelligence compared to the Genos normative sample scores. The Genos normative sample data in this table is taken from Gignac, G. (2010). Seven-factor model of emotional intelligence as measured by Genos EI. European Journal of Psychological Assessment. *26*(4), 309–316.

A series of independent *t* test was calculated comparing the mean scores for interpersonal and intrapersonal EI scores for athletic training students who completed more than 501 clinical experiences hours (CEH) to their peers who recorded less than 500 clinical experiences hours. The mean, standard deviation, p value, and effect size for each group is presented in Table 23. No significant difference was found between intrapersonal EI scores with the completion more or less than 500 clinical experiences hours. The mean

intrapersonal EI score of athletic training students with more than 501 CEHs (M = 70.60, sd = 8.17) was not significantly different from the mean score of those who completed less than 500 CEHs (M = 69.53, sd = 8.3). A significant difference in mean interpersonal EI scores was found based on number of CEHs completed. The mean interpersonal EI score among athletic training students with more than 501 CEHs (M = 51.76, *sd* = 5.94) was significantly higher than those who completed less than 500 CEHs (M = =50.79, *sd* = 5.35).

Table 23

Clinical Hours and Emotional Intelligence (n=658)

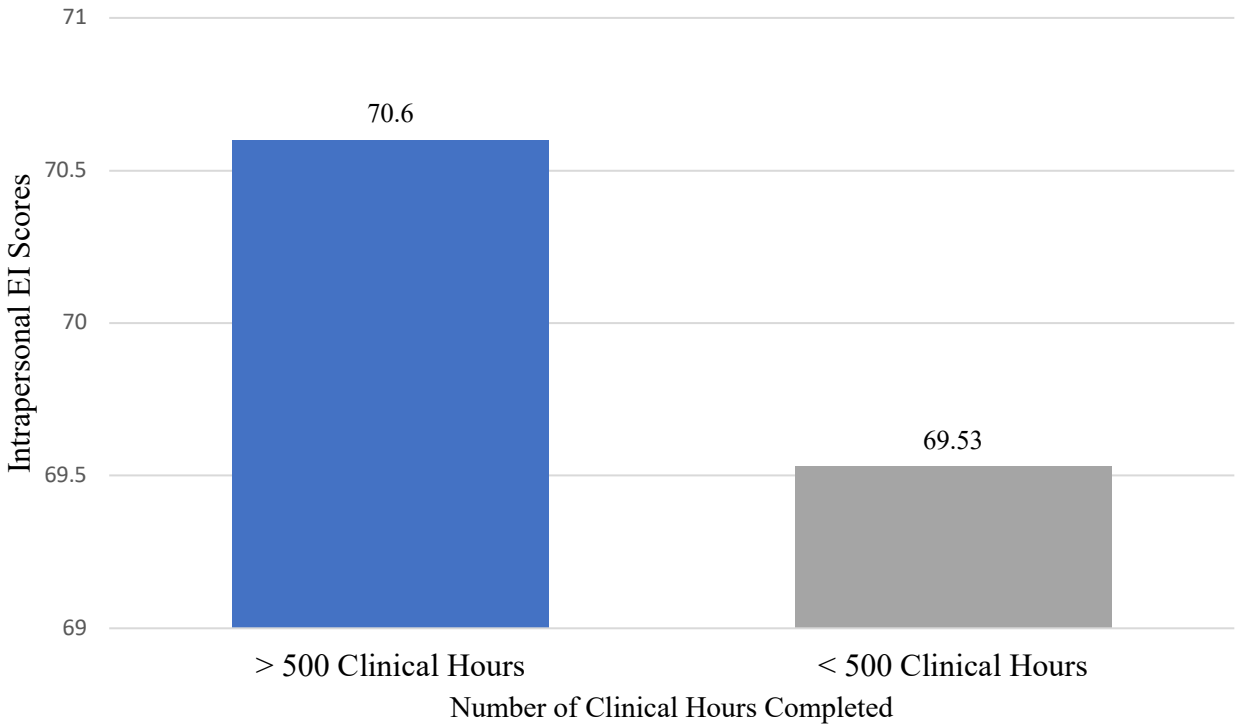
	Intrapersonal EI M(SD)	Interpersonal EI M(SD)
> 500 Clinical Hours	70.60 (8.17)	51.76 (5.94)
< 500 Clinical Hours	69.53 (8.38)	50.79 (5.35)
P value	0.102	0.03*
Effect Size	0.13	0.17

*Correlation is significant at the 0.05 level; **Correlation is significant at the 0.01 level, M = mean; SD = standard deviation; EI = emotional intelligence

Note. This table demonstrates the difference between intrapersonal and interpersonal emotional intelligence scores in athletic training students with more than 500 clinical experiences hours compared to those with fewer than 500 clinical experience hours. Athletic training students with more than 500 clinical experience hours demonstrate behaviors associated with emotional intelligence significantly more frequently than those with fewer than 500 hours.

Figure 14

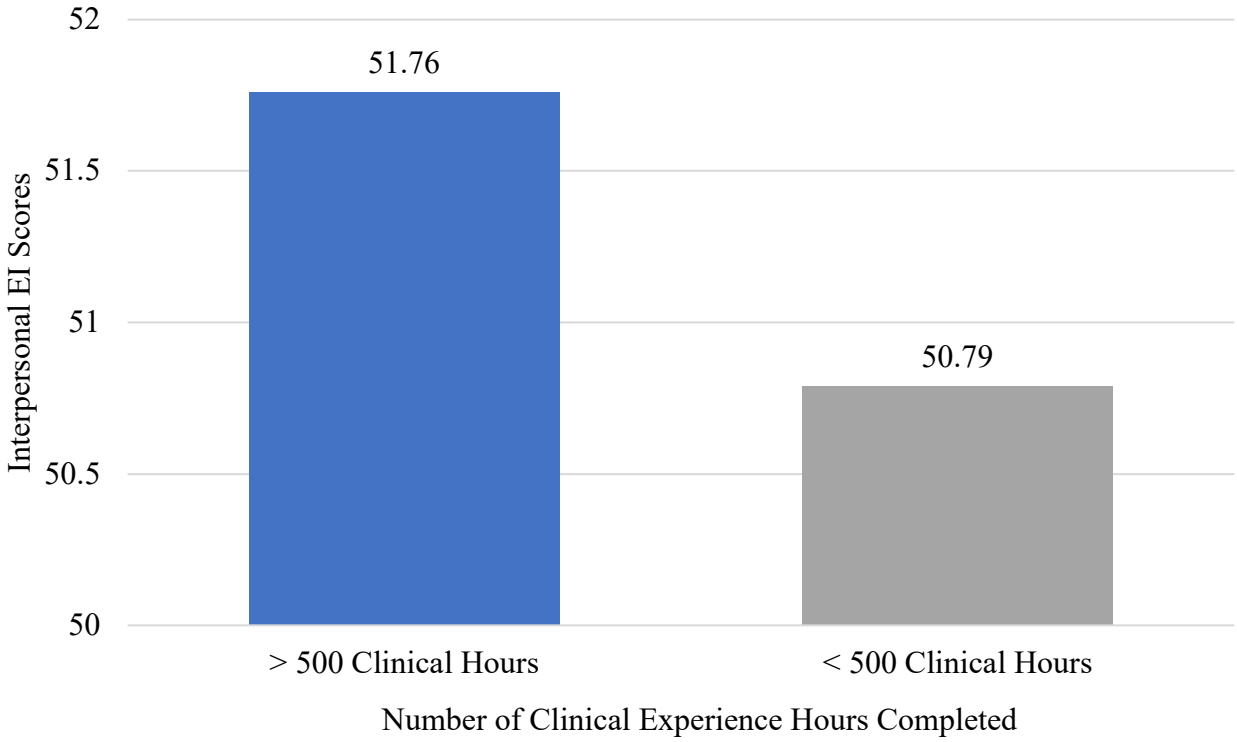
Intrapersonal Emotional Intelligence Scores and Clincial Experince Hours



Note. This figure displays intrapersonal emotional intelligence scores in students with more than 500 clinical experiences hours compared to students with less than 500 clinical experience hours. On average, athletic training students with more than 500 clinical experience hours demonstrate higher amount of behaviors associated with intrapersonal EI factors.

Figure 15

Interpersonal Emotional Intelligence Scores and Clinical Experiences Hours



Note. This figure displays interpersonal emotional intelligence scores in students with more than 500 clinical experiences hours compared to students with less than 500 clinical experience hours. Athletic training students with more than 500 clinical experience hours demonstrate a significantly higher amount of behaviors associated with interpersonal EI factors.

Recommendations and Implications for Educational Leadership in Athletic Training

The results of this study suggest several important recommendations for both educators and program administrators in athletic training education. As a healthcare discipline, athletic training educators and program administrators are responsible for ensuring students develop into empathetic and compassionate patient-centered clinicians. This study provides insight into areas that may require development in emotional intelligence.

Assessment of Emotional Intelligence

The GEII -Concise version was found to be an efficient and reliable instrument to assess how frequently athletic training students demonstrate EI skills. As this is the first study to capture EI skills in athletic training students, it provides evidence that EI skills can be assessed with ease and reliability. Assessing and interpreting EI scores may provide educators and program administrators with emotional and social development information yet to be collected. Educators and program administrators should consider assessing EI skills at the beginning of the professional phase to establish baseline scores. It should be noted that EI skill assessment and benchmarking has been used as admission criteria in other disciplines, however future research is needed to examine EI skills as a predictor of academic and clinical performance in athletic training students (Genos International, 2018; Smith, 2016). EI skill assessment should not result in punitive actions or impact other performance assessments, rather EI skills assessment should be comprehensive in nature (ie., 360-degree assessment) and used to inform and facilitate EI skill development. Educators and program administrators may consider integrating EI assessment throughout the program to track an individual's EI skill development. Regular assessment will also allow students to reflect on more recent emotional and social situations, however a timeline for instruction and assessment has not been definitively established in the research. The combination of face-to-face instruction, assessment, and feedback using the Genos model of EI

has shown a significant increase in the demonstration of behaviors associated with EI skills in as little as three months (Kozlowski, 2018). Furthermore, a final assessment at the end of the professional program will provide educators and program administrators with important information regarding EI skills over time. The percentile scores presented in earlier in this chapter should serve as a benchmark for individual scores, and should not be used as a comparison between students or minimum criteria. Assessment of EI skills is only one aspect of integrating EI skills into athletic training program curriculum.

Development of EI Skills in Athletic Training

Based on the results of this study, athletic training students who have completed more than 500 clinical experience hours demonstrated more behaviors associated with EI compared to their peers with less experience. EI skills can be improved through strategic didactic programing, assessment, feedback, and individualized action steps if combined with appropriate mentorship and facilitation (Cherry, Fletcher, O'Sullivan, & Dornan, 2014; Cobb & Mayer, 2000; Goleman, 2013; Kozoloski, 2018; Vesely et al., 2014). Before athletic training programs integrate EI development into their curriculum, they should first examine the program's culture and ability to model behaviors associated with EI to students (Cobbs & Mayer, 2000; Greiner & Knebel, 2003; Vandervoort, 2006). Kozlowski et al (2018) significantly improved EI skills in 60 clinical nurses in a five-hour workshop followed by a 30 minutes one-on-one consultation using the Genos model of EI (Kozlowski et al, 2018). Improving EI requires strategic integration into not only the curriculum but the culture of the entire program (Cherry, Fletcher, O'Sullivan, & Dornan, 2014; Cobb & Mayer, 2000). Based on the results of this study when developing EI skill development, educators should create formal didactic opportunities early in the student's academic and clinical experiences as students with fewer clinical experience hours demonstrate fewer behaviors

associated with EI skills. As a student progresses through the program, EI development should shift to individualized action steps for implementing EI skills into clinical practice. The results of this study offer educational leaders in athletic training with insight into the emotional and social abilities of their students and where these students may need skill development.

Interpersonal Emotional Intelligence Skills

The results of this study highlight a novel approach to EI skill assessment. This was the first study to examine intrapersonal EI scores, or behaviors associated with emotions in self, and interpersonal EI scores, or behaviors associated with emotions in others. Research indicates today's college-aged students are more narcissistic, demonstrate less empathy, and have underdeveloped in-person social skills (Twenge & Park, 2019; Konrath, O'Brien, & Hsing, 2011; Zarins & Konrath, 2016). Athletic training students' EI skills were consistent with these emotional and social traits. Athletic training students demonstrate fewer overall interpersonal EI skills, which indicates they do not identify, regulate, express, or manage emotions in others effectively. Interpersonal EI skills are fundamental for students to be able to demonstrate empathy. Educational leaders in athletic training can use these results to better understand today's athletic training students. Students today need EI skill development focused on identifying, expressing, and managing emotions in colleagues and patients. It is often assumed that an individual that enters a healthcare program is able to demonstrate strong interpersonal skills, however the results of this study suggest that educators may have to teach, assess, and develop the EI skills that support interpersonal abilities.

Limitations

This research study was not without limitations. The Genos Emotional Intelligence Inventory (GEII) - Concise Version used to measure how often an individual demonstrates behaviors associated emotional intelligence was a self-reported assessment instrument. Self-reported instruments are influenced by self-efficacy, recall bias, altered perception, and memory decay (Alviar et al., 2011a; Alviar et al., 2011b; Herrman & Regan, 2008; Herrman et al., 2011; Smith, Brown, Ubel, 2008). As with all self-reported instruments, an individual may choose to select answers based on what they feel is the correct or best answer, which may alter the accuracy of the scores. In addition, a lack of self-awareness regarding emotional and social behaviors associated with EI may result in inaccurate reporting or inconsistencies in perceived behaviors. Lastly, self-reported scores may suffer from memory decay if the individual cannot accurately recall behaviors being scored on the GEII. The GEII controls for these limitation by asking the individual score each statement based on "typical performance" instead of "maximal performance", therefore there are no correct answers (Gignac, 2010). The statements on the GEII are very broad and widely applicable to a variety of settings reducing the individual's chances of memory decay or recall bias. The GEII also controls for these factors by asking the individual to not focus on specific events, rather overall behavior. Although a widely used valid and reliable instrument, self-reported assessments may not provide a complete assessment of EI skills.

A more complete assessment would include both the self-reported and rater-reported versions of the GEII. When both of these instruments are used together the assessor is able to capture a 180-degree or 360-degree assessment of the individual's ability to demonstrate behaviors associated with EI. This assessment methodology is superior to self-reported EI scores as the focus is shifted to how others perceive the individual's behavior. In this case, an additional level of data analysis can examine the consistency between self and rater

assessments. The inclusion of the 180-degree or 360-degree GEII assessment methodology should be examined in future research in healthcare disciplines.

At the outset of this study the desired sample size was approximately 20% of the eligible athletic training students or 2,000 survey responses. The actual sample size collected was approximately 8-10% of the eligible population of athletic training students (n=658). The sample included a disproportionally larger number of females and undergraduate students. Although consistent with the current demographics of the profession, a larger sample of males and graduate students may have impacted the results of the study. Available research has not definitively determined a sample size needed to sufficiently examine EI scores within a specific population, however due to the relatively small variance in EI scores large samples greater than 2,000 are recommended (Zhoc, Johnson, & Webster, 2017). Future research in athletic training should continue to aim for samples over 2,000.

This study design was a cross-sectional survey assessment of current athletic training students. As only athletic training students were included in the study, the results of the study may not be generalizable to other disciplines. There are unique qualities about athletic training students that may have influenced the EI scores and may not be suitable benchmarks for other healthcare professions. The athletic training student EI scores reported above are consistent with Genos normative data, which indicates that the scores are consistent with general population sample.

Implications for the Researcher's Leadership Agenda and Growth

This study has provided insight into the frequency athletic training students demonstrate behaviors associated with emotional intelligence skills. The results of this study

have implication for leadership within the profession of athletic training. As a leader, these results provide critical insight into the emotional and social development of athletic training students. The novel assessment of EI skills in athletic training students identified several areas of that may require development. From an educator and program administrator lens, these areas should become the focus of strategic EI development in athletic training students. Furthermore, it is evident that today's athletic training students require more support in specific EI skills compared to previous generations. Individuals who use the emotional intelligence leadership model will be able to better integrate EI skill development into athletic training curriculum and clinical experiences. Based on the conclusions drawn from this study, athletic training students demonstrate less behaviors associated with interpersonal EI skills which are critical skills for healthcare professionals. As a novel approach in the field of athletic training, leaders can utilize these results to better establish a clear direction for emotional intelligence research in athletic training and other healthcare disciplines.

Future Research

This study was the first comprehensive analysis of emotional intelligence skills in athletic training students. This study was critical in establishing the first benchmark data for EI scores in athletic training students. Future research should branch into four areas of EI assessment across the athletic training profession; (1) expand data collection of EI scores in athletic training, (2) examine the link between EI skills and healthcare core competencies, (3) investigate how EI skills are developed over time, (4) investigate the integration of EI skill development into athletic training education, and (5) 360-degree assessment of the frequency that athletic training student and athletic trainers demonstrate EI behaviors.

The next immediate step is to expand data collection of EI scores among athletic training students and certified athletic trainers to establish normative EI data and percentile scores for total EI and the seven factors. This step involves expansion of this study sample to greater than 2,000, as well as development of a new study to target practicing athletic trainers. Establishing a normative benchmark will provide critical information for integrating EI assessments into education and clinical practice. A lack of research in other healthcare disciplines exists, therefore expansion of data collection to compare other healthcare disciplines will be a critical research line to investigate differences in EI scores between various healthcare disciplines. With the increasing emphasis on interprofessional education and practice, it will be timely to investigate EI skills across disciplines that collaborate on patient care. Beyond the expansion of EI datum in healthcare, investigations to examine the impact of EI skills and job satisfaction, burnout, stress, anxiety, and patient satisfaction needs to be completed to fully understand the direction of EI research in healthcare.

Additional research is needed to expand the GEII's Likert scale to a 7 or 10 scale item. The expansion of the scale from its current state of five options will improve the psychometric properties of the assessment instrument, as well as allow for more powerful statistical analysis. Research and development to adapt the GEII to specifically focus on healthcare workplace application would also be fruitful.

Conclusion

Emotional Intelligence refers to an individual's ability to demonstrate behaviors that involve the identification, regulation, expression, and utilization of emotions to manage one's self and influence others (Salovey & Mayer, 1990; Gignac, 2010). EI skills represent

fundamental behaviors that support a student's ability to deliver empathic and compassionate patient care while mitigating stress and burnout. Today's college-aged students have experienced a delay in emotional and social development due to their exposure to technology, social media, and increased parental investment during critical middle and late adolescent years (Twenge & Park, 2019). As a result, it has been theorized that this generation of student lacks important skills associated with emotional and social skills. Available research has failed to examine EI skills in athletic training students.

This study set out to investigate if athletic training students demonstrate behaviors associated with EI skills using the GEII. The GEII concise version was found to be a valid and reliable measure of EI in athletic training students. Female athletic training students (M = 122.12, sd = 12.32) demonstrate behaviors associated more frequently compared to their male peers (M = 119.66, sd = 13.46). Overall, athletic training students demonstrated fewer behaviors associated with EI skills compared to the Genos normative data from previous generations. These findings are consistent with previously publish findings among nursing, pharmacy, and dentistry students (Foster et al., 2018). Athletic training students mean total EI scores (M = 121.50, sd = 12.65) were higher than nursing (M = 115.25, sd = 13.65), pharmacy (M = 110.37, sd = 16.79), and dentistry (M = 114.27, sd = 11.53) (Foster et al., 2018). There was no difference between mean EI scores in undergraduate and graduate athletic training students. Therefore, graduate athletic training students require EI skill development support despite being older than the undergraduate sample. A weak positive correlation exists between EI scores and age. Age alone is not a strong predictor of an individual's ability to demonstrate EI behaviors, however experience may support the development of EI skills over time. This study found that athletic training students with more than 500 clinical experience hours demonstrate more EI behaviors

than their peers with less experience. In summation, the novel finding provides athletic training educational leaders with critical insight into the emotional and social needs of the current students entering athletic training education programs. Furthermore, these findings highlight the areas where educators and preceptors can target support for students as they develop EI behaviors over the course of their education. The college-aged students entering athletic training programs over the next decade may require focused and individualized curriculum and clinical supervision that facilitates the awareness of behaviors associated with EI skills. Likewise, these students may benefit from strategic assessment of EI behaviors throughout their professional education and as they develop patient care skills in a clinical setting. Future research should focus on exploring the demonstration of behaviors of EI skills throughout the profession of athletic training.

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Appendices

Appendix A *Plymouth State University IRB Approval*

Plymouth State UNIVERSITY

Institutional Review Board

January 3, 2020

Dear Kevin Silva:

Study: An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory
Approval Date: January 3, 2020

The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 101(b). Approval is granted to conduct your study as described in your protocol. Be sure to complete the Final Report Form when your research is finished.

If, during the course of your project you intend to make changes that may significantly affect the human subjects involved (particularly methodological changes), you must obtain IRB approval prior to implementing these changes. Any unanticipated problems related to your use of human subjects must be promptly reported to the IRB. The IRB may be contacted through Dr. Ryanne Carmichael, Chair of the IRB. This is required so that the IRB can update or revise protective measures for human subjects as may be necessary.

You are expected to maintain as an essential part of your project records, any records pertaining to the use of humans as subjects in your research. This includes any information or materials conveyed to and received from the subjects as well as any executed forms, data and analysis results. If this is a funded project (federal, state, private, other organization), you should be aware that these records are subject to inspection and review by authorized representatives of the University, State of New Hampshire, and/or the federal government.

Please note that IRB approval cannot exceed one year. If you expect your project to continue beyond this approval period, you must submit a request for continuance to the IRB for renewal of IRB approval. IRB approval must be obtained and maintained for the entire term of your project or award.

Please notify the IRB in writing when the project is completed. We may ask that you provide information regarding your experiences with human subjects and with the IRB review process. Upon notification, we will close our files pertaining to your project. Any subsequent reactivation of the project will require a new IRB application. I have attached the Project Completion Form for your convenience.

Please do not hesitate to contact the IRB if you have any questions or require assistance. We will be happy to assist you in any way we can. Thank you for your cooperation and efforts throughout this review process. We wish you success in this endeavor.

Sincerely,

Ryanne Carmichael

Ryanne Carmichael, PhD
Institutional Review Board
rcarmichael@plymouth.edu

Plymouth State University. 17 High Street. Plymouth, New Hampshire, 03264

Appendix B *Participant Recruitment Email Template*

Subject: Research Participant Opportunity for AT Students

Body:

Dear_____,

I am currently recruiting professional, post-professional, and residency AT students to participate in a 5-10 minute online survey. This study is approved by the Plymouth State University Institutional Review Board.

Title:
An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory.

Introduction:
This research will ask you questions about how often you demonstrate behaviors commonly associated with emotional intelligence skills during academic and clinical experiences. The purpose of the study is to investigate the frequency that AT students demonstrate behaviors associated with emotional intelligence skills.

Eligible students will include:
AT students currently enrolled in a professional, post-professional, and residency AT program between the ages of 18-30 (Please forward this email to eligible students.)

What do you have to do?
In order to complete the study, you will be asked to take an anonymous online survey that asks questions on your demographics, perceived stress, and emotional intelligence. If you are interested in learning more about the study, please click the link below.

Time commitment:
The entire survey should take no longer than 5-10 minutes to complete.

Are you interested in participating? Please click the link below to be redirected to the survey.

[Insert Survey Link Here]

With Gratitude,

Kevin J. Silva, MSAT, ATC
Primary Investigator

Appendix C *Informed Consent*

Welcome to the research study!

INFORMED CONSENT FORM
CONSENT TO PARTICIPATE VOLUNTARILY IN A RESEARCH INVESTIGATION
PLYMOUTH STATE UNIVERSITY

INVESTIGATOR NAME:
Kevin J. Silva, MSAT, ATC (EdD Candidate)
Faculty Advisor: Dr. Marcel Lebrun (mrlebrun@plymouth.edu)

STUDY TITLE:
An investigation of behaviors associated with emotional intelligence skills: A cross-sectional survey of athletic training students using the Genos Emotional Intelligence Inventory.

PURPOSE OF THE STUDY
The purpose of this research study is to investigate if athletic training students demonstrate behaviors associated with emotional intelligence skills using the Genos Emotional Intelligence Inventory. In addition this study aims to explore the relationship between EI skills related to self and EI skills related to others and compare EI skills in athletic training students to normative data.

I am being asked to participate in this study because I am between the ages of 18-30 and currently enrolled as an athletic training student or resident in a CAATE accredited education program.

DESCRIPTION OF THE STUDY
This research will ask you questions about how often you demonstrate behaviors commonly associated with emotional intelligence skills. Emotional intelligence skills, such as emotional awareness, expression, reasoning, management, and control, are important fundamental qualities that correlate with productive workplace behaviors and interpersonal relationship management.

The amount of time required to participate in the study is approximately 5-10 mins. There is no cost for you to participate in this study.

RISKS AND DISCOMFORTS
As a participant in this study, I will be exposed to minimal to no foreseeable risk. Risks associated with this study are not greater than those ordinarily encountered in daily life. If at any time during the survey I feel an unwanted emotional response to a question(s), I understand that I have the right to stop the survey by closing the browser window.

BENEFITS
There may be no direct benefits of participating in this study; however, the knowledge received may be of value to the profession of athletic training by providing insight into EI skills demonstrated by athletic trainers.

ALTERNATIVE PROCEDURES
There are no alternative procedures. The alternative would be to not participate in the study.

CONFIDENTIALITY
All survey submissions are anonymous and no identifiable information will be collected during the survey. All documents and information pertaining to this research study will be kept confidential in accordance with all applicable federal, state, and local laws and regulations. I understand that data generated by the study may be reviewed by Plymouth State University's Institutional Review Board, which is the committee responsible for ensuring my welfare and rights as a research participant, to assure proper conduct of the study and compliance with university regulations. If any presentations or publication result from this research, I will not be identified by name. The information collected during my participation in this study will be kept for seven (7) years. My confidentiality will be completely protected throughout the research process as there will be no identifiable information collected during the survey.

TERMINATION OF PARTICIPATION
I may choose to withdraw from this study at any time and for any reason by closing the browser window. If this is an anonymous survey, research records cannot be destroyed following submission of the survey. However, any partially completed surveys will be excluded from data analysis. If I am not between the ages of 18-30 years old and currently enrolled in a CAATE accredited education program, I understand that I will be excluded from participating in the study.

COMPENSATION
I will not receive payment for being in this study. Participation in this study is strictly voluntary. There will be no cost to me for participating in this research.

INJURY COMPENSATION
Neither Plymouth State University nor any government or other agency funding this research project will provide special services, free care, or compensation for any injuries resulting from this research. I understand that treatment for such injuries will be at my expense and/or paid through my medical plan.

QUESTIONS
All of my questions have been answered to my satisfaction and if I have further questions about this study, I may contact Kevin J. Silva, MSAT, ATC at kjsilva@plymouth.edu or Dr. Marcel Lebrun (mrlebrun@plymouth.edu) If I have any questions about the rights of research participants, I may call the Chairperson of the Plymouth State University's Institutional Review Board at 603-535-3114 (Valid until July 1, 2021).

VOLUNTARY PARTICIPATION

I understand that my participation in this study is entirely voluntary, and that refusal to participate will involve no penalty or loss of benefits to me. I am free to withdraw or refuse consent, or to discontinue my participation in this study at any time without penalty or consequence. I voluntarily give my consent to participate in this research study.

Select one:

I consent, begin the study by clicking “next” (1)

I do not consent, I do not wish to participate, end survey by closing the window (2)

Appendix D *Demographic Questionnaire and Genos Emotional Intelligence Inventory*

Q1
What is your age?

_____

Skip To: End of Survey If What is your age? > 30
Skip To: End of Survey If What is your age? < 18

Q2 How do you describe your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary/third gender (3)
- ○ Prefer to not say (4)
- ○ Prefer to describe [type below] (5)

Display This Question:
If How do you describe your gender? = Prefer to describe [type below]

Q3 If you entered "prefer to describe" above, please respond below:

_____

Q4 How do you describe your ethnicity?

- ○ Native American Indian or Alaska Native (1)
- ○ Asian (2)
- ○ Black or African American (3)
- ○ White (4)
- ○ Hispanic, Latinx, or Spanish (5)
- ○ Unknown (6)
- ○ Other/Prefer to describe [type below] (7)
- ○ Don't wish to answer (8)

Display This Question:
If How do you describe your ethnicity? = Other/Prefer to describe [type below]

Q5 If you entered "prefer to describe" above, please respond below:

_____

Q6 Which program are you currently enrolled in?

- Professional Bachelor's Athletic Training Program (1)
- Professional Master's Athletic Training Program (2)

Display This Question:
If Which program are you currently enrolled in? = Professional Master's Athletic Training Program
Or Which program are you currently enrolled in? = Professional Bachelor's Athletic Training Program

Q7 How many clinical hours have you completed to date?

- 0 (1)
- 1-100 (2)
- 101-300 (3)
- 301-500 (4)
- 501-700 (5)
- 701-1000 (6)

Q8 Anticipated year of graduation? (format 20xx)

_____

Q9 Approximate GPA to date? (based on a 4.0 scale)

_____

Q10 Instructions

The Genos EI Inventory (Concise) has been designed to measure how often you believe you demonstrate emotionally intelligent behaviors during your academic and clinical experiences. There are no right or wrong answers. However, it is essential that your responses truly reflect your beliefs regarding how often you demonstrate the behavior in question. You should not answer in a way that you think sounds good or acceptable. In general try not to spend too long thinking about responses. Most often the first answer that occurs to you is the most accurate. However, do not rush your responses or respond without giving due consideration to each statement. Below is an example.
Q. I display appropriate emotional responses in difficult situations. You are required to indicate on the response scale how often you believe you demonstrate the behavior in question. There are five possible responses to each statement (shown below). You are required to circle the number that corresponds to your answer where...

1 = Almost Never
2 = Seldom
3 = Sometimes
4 = Usually
5 = Almost Always

When considering a response it is important not to think of the way you behaved in any one situation, rather your responses should be based on your typical behavior. Also, some of the questions may not give all the information you would like to receive. If this is the case, please choose a response that seems most likely. There is no time limit; however it should take between 5-7 minutes to complete.

- I have read the directions (11)

Q20 The Genos EI Inventory - Please select corresponding statement that is most indicative of the way you typically think, feel, and act during academic and clinical experiences.

	Almost Never (1)	Seldom (2)	Sometimes (3)	Usually (4)	Almost Always (5)
1. I demonstrate to others that I have considered their feelings in decisions I make at work. (1)	○	○	○	○	○
2. I fail to recognize how my feelings drive my behavior at work. (2)	○	○	○	○	○
3. I respond to events that frustrate me appropriately. (3)	○	○	○	○	○
4. I find it difficult to identify my feelings on issues at work. (4)	○	○	○	○	○
5. I express how I feel to the wrong people at work. (5)	○	○	○	○	○
6. I fail to handle stressful situations at work effectively. (6)	○	○	○	○	○
7. When someone upsets me at work I express how I feel effectively. (7)	○	○	○	○	○
8. I consider the way others may react to decisions when communicating them. (8)	○	○	○	○	○
9. When I get frustrated with something at work I discuss my frustration appropriately. (9)	○	○	○	○	○
10. When I am under stress I become impulsive. (10)	○	○	○	○	○
11. I fail to identify the way people respond to me when building rapport. (11)	○	○	○	○	○
12. I understand the things that make people feel optimistic at work. (12)	○	○	○	○	○
13. I take criticism from colleagues personally. (13)	○	○	○	○	○

14. I am effective in helping others feel positive at work. (14)	○	○	○	○	○
15. I communicate decisions at work in a way that captures other's attention (15)	○	○	○	○	○
16. I gain stakeholders' commitment to decisions I make at work. (16)	○	○	○	○	○
17. I appropriately communicate decisions to stakeholders. (17)	○	○	○	○	○
18. I express how I feel at the appropriate time. (18)	○	○	○	○	○
19. I understand what makes people feel valued at work. (19)	○	○	○	○	○
20. I effectively deal with things that annoy me at work. (20)	○	○	○	○	○
21. I appropriately respond to colleagues who frustrate me at work. (21)	○	○	○	○	○
22. I find it difficult to identify the things that motivate people at work. (22)	○	○	○	○	○
23. I fail to keep calm in difficult situations at work. (23)	○	○	○	○	○
24. I am aware of my mood state at work. (24)	○	○	○	○	○
25. I help people deal with issues that cause them frustration at work. (25)	○	○	○	○	○
26. I remain focused when anxious about something at work. (26)	○	○	○	○	○
27. I fail to resolve emotional situations at work effectively. (27)	○	○	○	○	○

28. I am aware of how my feelings influence the decisions I make at work. (28)	○	○	○	○	○
29. I have trouble finding the right words to express how I feel at work. (29)	○	○	○	○	○
30. When upset at work I still think clearly (30)	○	○	○	○	○
31. I don't know what to do or say when colleagues get upset at work. (31)	○	○	○	○	○

End of Block: