

# Athletic Trainers' Confidence and Proficiency in Addressing Athlete Mental Health

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## **ABSTRACT**

Despite the prevalence of athletes reporting they would seek an athletic trainer's help, athletic trainers may not feel proficient or competent in addressing mental health with their athletes (Bird, et al., 2018). Athletic trainers need proper mental health education set to a specific standard to provide an adequate continuity of care for athlete mental health. To reach this goal, a better understanding of the link between education and experiences, and athletic trainer confidence and performance is needed to determine how to achieve this outcome in a practical manner. This study attempted to investigate the relationships between education and self-efficacy and self-efficacy and subjective performance as it relates to athletic trainers performing the skills outlined in the 2020 CAATE educational standards on mental health. The ATs surveyed reported moderate-high levels of confidence and subjective performance in their abilities to perform the five competencies (identify, refer, support, develop, & implement) outlined in the 2020 CAATE standards for mental health education. The athletic trainers surveyed reported the highest levels of confidence and subjective performance in their abilities to identify, refer, and provide support to athletes with mental health conditions, rather than developing and implementing policies and procedures on athlete mental health. The statistical analysis provides evidence for self-efficacy

correlations within athletic training, which provides a case for more detailed mental health education and volume of post-certification educational opportunities related to mental health for athletic trainers.



Athletic Trainers' Confidence and Proficiency in Addressing Athlete Mental Health

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## Chapter I: INTRODUCTION

All athletes face a variety of concerns in their life such as injury, illness, and mental health issues and athletic trainers are typically the first person an athlete goes to for these concerns (Leone et al., 2005). According to the NCAA Sport Science Institute, 50% of student athletes report overwhelming feelings of anxiety and 30% of student athletes report feelings of depression (NCAA, 2014). Athletic trainers are also usually the first person to care for an injured athlete and the most frequent healthcare provider an athlete interacts with (Barefield & McAllister, 1997). In a 1996 study by Larsen et al., 71% of surveyed athletic trainers reported their athletes commonly dealt with anxiety and 53% of the surveyed athletic trainers reported that they have athletes that experience significant emotional distress. The NCAA (2014) states that the athletic trainer is often a companion and confidant for athletes within their care. The view of athletic trainers as companions indicates the importance of the athletic trainer-athlete relationship beyond physical support because they also support athletes with mental health or psychological concerns.

For most conditions (i.e., injuries, illnesses), athletic trainers are guided by a standard regulated by the Board of Certification for the Athletic Trainer (BOC) and Commission on Accreditation of Athletic Training Education (CAATE). In previous years, there has not been a set standard for how athletic trainers should address mental health conditions, despite the view of athletic trainers supporting athletes' mental health. The CAATE 2020 Standards for Accreditation of Professional Athletic Training Programs, however, includes two new standards related to *behavioral health* (CAATE, 2019). First, Standard 77 states that athletic training students should be taught how to "Identify, refer, and give support to patients with behavioral health conditions. Work with other health care professionals to monitor these patients' treatment,

compliance, progress, and readiness to participate.” An annotation to this standard defines the term “behavioral health” by stating “These behavioral health conditions include (but are not limited to) suicidal ideation, depression, anxiety disorder, psychosis, mania, eating disorders, and attention deficit disorders (CAATE, 2019).” For this project, “mental health” is used synonymously with “behavioral health” in order to fall in line with the psychological literature in which this project is based. Second, Standard 94 states athletic training students should be educated on how to “Develop and implement specific policies and procedures for the purposes of identifying patients with behavioral health problems and referring patients in crisis to qualified providers (CAATE, 2019).” The CAATE 2020 standards clearly indicate the growing recognition and overall importance of mental health education for athletic trainers with specific reference to identifying, referring, and giving support to athletes with mental health concerns and developing and implementing policies on mental health.

These new CAATE standards show progress in the psychological education of athletic trainers. Unfortunately, the standards are limited in detail and scope. One major issue is that the *process* to achieve standards 77 and 94 is not provided. First, the standards do not clearly define how athletic training students should be taught these competencies. Without clearly defined methods of teaching these new standards, athletic training educators are left with little guidance in developing their teaching methods and lessons. Second, it is possible that the educators who are expected to teach to these standards might be lacking the education themselves. Many of these athletic training educators were not required to have education on behavioral health conditions and methods of recognizing these conditions because the standards did not previously exist. When taken together, there is a clear educational gap in the way addressing mental health is to be taught to athletic trainers. This lack of education may be linked with athletic trainers’

lack of confidence in addressing mental health with their athletes, and ultimately their performance.

The lack of confidence athletic trainers' likely have in addressing mental health with their athletes limits the quality of care athletic trainers can provide to their athletes. This would result in poor quality of the implementation of the mental health standards. Confidence is important to how one performs tasks, especially when it comes to duties related to a job (Parker, 1998). The more practice an individual has with performing a skill, the more confident they will likely be in performing that skill again (Bandura, 1977). The lack of experience many athletic trainers have with mental health education, recognition, referral, and support as outlined by the new CAATE standards may translate into their levels of confidence in performing these tasks. Confidence is an important part of the proficiency athletic trainers possess in addressing mental health with their athletes. By lacking confidence in addressing athlete mental health, athletic trainers may face difficulties in how they choose to address these issues, and, in turn, may prevent athletes from receiving the proper help and support they need.

This educational gap is especially problematic because mental health is a growing concern in athletic organizations (Mann et al., 2007). Athletic trainers that lack psychological or mental health education will not be proficient in providing psychological healthcare access for their athletes (Bandura, 1977). Mann et al. (2007) studied the types and frequency of psychological issues team physicians encounter when working with athletes. Team physicians reported they discussed stress/pressure, anxiety, burnout, and disordered eating and/or body image with patient-athletes more "Often" and "Sometimes" than they did "Rarely" or "Never". Given the prevalence of mental health concerns athletes report to their healthcare teams, we can see that guidance and education is necessary for athletic trainers on mental health topics.

It is often argued that psychologists should handle mental health issues for athletes, but that is often not a practical solution. Among 120 NCAA Division I FBS university athletic departments' websites investigated by Hayden et al., (2013), only 34 universities (28.3%) were identified as having a sport psychology provider and only 29 universities (24.16%) had a formal program in sport psychology. Out of the previously mentioned 29 universities with a formal program in sport psychology, 67.6% of these had only 1 sports psychologist on staff (Hayden et al., 2013). A majority of universities do not employ a full-time sports psychologist. The NCAA reports that there are over 460,000 student athletes that compete in 24 sport types each year. Even if a full-time psychology provider is employed, the demand for services is typically too high for one provider to handle. Despite standards indicating the importance of working with other professionals, the reality in clinical practice is that athletic trainers are often left to fulfill a counseling-type role when approached by athletes about mental health concerns.

Current literature supports the need for increased educational standards within psychology for athletic trainers. The NCAA states in their "Best Practices for Mental Health" that all collegiate athletics programs should have an athletic trainer and team physician to serve as core members of the mental health team (NCAA, 2014). The NCAA Interassociation Recommendations state that the athletic trainer should create a "psychological concerns plan" to assist student-athletes and manage risk (NCAA, 2014). If athletic trainers are expected to create these plans and serve as the first line of care for athletes when mental health issues arise, then there needs to be clear methods of implementing these competencies and ensuring educational competence on mental health for athletic trainers.

Although the new CAATE standards are likely going to increase mental health education for athletic trainers, the lack of these standards until 2020 has created a gap in the skillsets

between newly certified and currently practicing athletic trainers. This education gap needs to be addressed in order to provide athletes with the most up-to-date best practices in sports medicine care by their athletic trainers. Many athletic trainers lack psychological or mental health education which creates a barrier to psychological healthcare access for their athletes (Misasi et al., 1996). Without a method to alleviate this educational gap and clear guidelines for how these new educational standards will be put into place, athletic trainers will continue to lack the education and confidence in addressing mental health conditions with their athletes, and thus lacking in an ability to care for their athletes.

Athletic Trainer Continuing Education Credits (CEU's) that focus on teaching and implementing these standards would be one method of alleviating this gap. As of June 2021, out of all of the CEU courses listed on the NATA Professional Development Center (N = 346), only 2% ( $n = 7$ ) of these courses are on topics related to mental health (NATA, 2021). More courses related to psychology and the 2020 CAATE standards on mental health would need to be implemented to utilize CEU opportunities as a way to alleviate the current gap in athletic trainer education on mental health.

## **Purpose**

Despite the prevalence of athletes reporting they would seek an athletic trainer's help, athletic trainers may not feel proficient or competent in addressing mental health with their athletes (Bird, et al., 2018). Athletic trainers need proper mental health education set to a specific standard to provide an adequate continuity of care for athlete mental health. To reach this goal, a better understanding of the link between education and experiences, and athletic trainer confidence and performance is needed to determine how to achieve this outcome in a practical manner. The purpose of this study is to, therefore:

(1) determine what level of (a) collegiate and (b) post-collegiate education ATs have received on mental health.

(a) **Collegiate** education includes courses taken at a college or university in which you received credit.

(b) **Post-Collegiate** education includes CEU opportunities, seminars, lectures, conferences, etc. completed post-BOC certification.

(2) determine what level of experience ATs have with assisting athletes with mental health concerns

(3) evaluate the level of confidence ATs feel in addressing athlete mental health concerns

(4) evaluate the level of subjective performance of ATs assisting athletes with mental health concerns

(5) examine the extent to which collegiate education, post-collegiate education, confidence, subjective performance, and experience will be associated (looking at the following competencies):

(a) Identify, refer, support athletes with mental health concerns and

(b) Develop & implement policies and procedures for assisting athletes with mental health concerns,

(6) examine if level of education (low versus high levels of both collegiate and post collegiate) is associated with confidence and subjective performance of the outcomes to:

(a) Identify, refer, support athletes with mental health concerns and

(b) Develop & implement policies and procedures for assisting athletes with mental health concerns.

## **Hypothesis**

It is hypothesized that athletic trainers will report that: (1) ATs have received little (a) collegiate and (b) post-collegiate education on mental health,(2) ATs have moderate experience with athletes that have mental health concerns, (3) ATs have low levels of confidence in addressing athlete mental health concerns, (4) ATs will report low levels of subjective performance in assisting athletes with mental health concerns, (5) collegiate education, post-collegiate education, confidence, subjective performance, and experience will be positively associated (when looking at the following competencies):

(a) Identify, refer, support athletes with mental health concerns and

(b) Develop & implement policies and procedures for assisting athletes with mental health concerns,

and (6) The high collegiate education group will have significantly higher confidence and subjective performance compared to the low collegiate education group on the outcomes to:

(a) Identify, refer, support athletes with mental health concerns and

(b) Develop & implement policies and procedures for assisting athletes with mental health concerns,

and the high post-collegiate education group will have higher confidence and subjective performance compared to the low post-collegiate education group on the outcomes to:

(a) Identify, refer, support athletes with mental health concerns and

(b) Develop & implement policies and procedures for assisting athletes with mental health concerns.

## **Significance**

Previous studies have shown that athletes rely on their athletic trainers for their overall health concerns, not just physical injuries (Leone, et al., 2005). Athletic trainers, however, are not formally trained to deal with any potential mental health concerns that athletes may face. Currently, there is little knowledge of athletic trainers' confidence and proficiency in addressing mental health concerns of their athletes. Most literature related to athletic trainers' addressing athlete mental health is over ten years old or older. There is currently no published literature on athletic trainers' confidence and proficiency to address athlete mental health to the 2020 CAATE standards. The new CAATE 2020 standards highlight the importance of athletic trainers being able to address mental health with their athletes, but the new standards also create an educational gap. New athletic trainers will be learning a skillset that currently practicing athletic trainers do not have and athletic training educators are left to figure out how to provide this education without distinct direction. This study investigated the frequency in which athletic trainers address mental health concerns with their athletes, their desire for an appropriate level of mental health education, the levels of confidence and subjective assessments of athletic trainers' performance in addressing mental health issues according the CAATE 2020 standards, and the relationships between athletic trainer education, self-efficacy, and performance through a questionnaire survey. The results of this study highlight the importance of psychology education for athletic trainers and the need for more effective education on these topics.

## **Delimitations**

1. All subjects will be current certified athletic trainers.
2. All subjects will be members of the National Athletic Trainers' Association (NATA).

- a. *Due to the survey being randomly distributed to ATs through the NATA email database*

### **Assumptions**

1. All answers provided by subjects in response to the questionnaire will be honest and accurate.

### **Operational Definitions**

- **Athletic Trainer (AT):** Health care professionals who render service or treatment, under the direction of or in collaboration with a physician, in accordance with their education and training and the state's statutes, rules, and regulations. As a part of the health care team, services provided by athletic trainers include primary care, injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions (NATA, 2019).
- **Sports Psychologist:** APA recognizes sport psychology as a proficiency acquired after a doctoral degree in one of the primary areas of psychology and licensure as a psychologist. This proficiency does not include those who have earned a doctoral degree in sport psychology but are not licensed psychologists (APA, 2019).
- **Mental Health:** A theoretical construct characterized by psychological, emotional, and social dimensions (Shannon, Hanna, Haughey, Leavy, McGeown, & Breslin, 2019).
  - *Behavioral health is synonymous with mental health for the purposes of this study in order to be congruent with the psychological literature in which this project is based.*

- National Athletic Trainers' Association (NATA): A professional organization that serves athletic trainers (NATA, 2019).
- Commission on Accreditation of Athletic Training Education (CAATE): The sole programmatic accreditor in athletic training and accredits professional and post-professional degree programs and postprofessional residency programs set by a peer review board (NATA, 2019).
- Board of Certification for the Athletic Trainer (BOC): The only NCCA accredited certification program in the U.S. in which a practitioner's entry-level knowledge and skills are demonstrated and measured against a defined standard (NATA, 2019).
- National Collegiate Athletic Association (NCAA): The National Collegiate Athletic Association is a member-led organization dedicated to the well-being and lifelong success of college athletes (NCAA, 2019).

## **Chapter II: LITERATURE REVIEW**

### ***Introduction***

The purpose of this study is to investigate the following: (1) what level of (a) collegiate and (b) post-collegiate education ATs have received on mental health, (2) determine what level of experience ATs have with assisting athletes with mental health concerns, (3) evaluate the level of confidence ATs feel in addressing athlete mental health concerns, (4) evaluate the level of subjective performance of ATs assisting athletes with mental health concerns, (5) examine if collegiate education, post-collegiate education, confidence, subjective performance and experience will be associated (looking at the following 5 competencies: identify, refer, support, develop, implement), and (6) examine if level of education (collegiate and post collegiate) is associated with confidence and subjective performance of the outcomes to (a) Identify, refer, support athletes with mental health concerns and (b) Develop & implement policies and procedures for assisting athletes with mental health concerns. An area of research that is lacking in the field of athletic training is the experience, education, and confidence of athletic trainers in dealing with issues that affect their athletes' psychological well-being.

Many athletes will experience conditions during their careers that will affect their thinking, feeling, mood, and behavior (Mann et al., 2007). According to the World Health Organization, common issues impacting student athletes' well-being include physical, mental, and social concerns. These factors relate to athletes' reported issues with academics, athletic performance, injuries, and stress (Gulliver et al., 2012; NCAA, 2016; Pinkerton et al., 1989). Furthermore, adjusting to college can exacerbate or create other issues for student-athletes. Athletic trainers are often the first person to care for an injured athlete and usually the most

frequent healthcare provider an athlete interacts with (Barefield & McAllister, 1997). Due to the large amount of interaction an athlete has with their athletic trainer, many athletes report that they feel comfortable going to their athletic trainer for concerns with mental health (Bird et al., 2018). Athletic trainers are identified by athletes and organizations as a key person to managing athletes' mental health; therefore, proper training on mental health conditions should be a priority so that the confidence levels and job performance of athletic trainers' addressing these conditions will improve.

Vaughan et al. (2004) used Bandura's self-efficacy construct to study athletic trainer confidence in helping female athletes with eating disorders. The results of this study showed that although most athletic trainers had dealt with a female athlete with an eating disorder, only a small percentage reported feeling confident in how they handled the situation. They concluded that collegiate athletic programs need to develop and implement policies on how to handle these situations. Although eating disorders make up only a small percentage of mental health conditions athletes may face, the confidence athletic trainers possess in how they handle an athlete with an eating disorder may be transferrable to other mental health conditions. It is important to measure confidence levels overall for athletic trainers' addressing mental health with their athletes so a more general measure of confidence in this area is obtained.

This chapter will provide a review of current literature to discuss the following: (1) the role of the athletic trainer, (2) psychology and mental health in athletic training, (3) educational preparation of athletic trainers and, (4) perceptions of confidence (i.e., self-efficacy) and subjective performance of athletic trainers.

### ***Role of the Athletic Trainer***

Athletic trainers are health care professionals who render service or treatment, under the direction of or in collaboration with a physician, in accordance with their education and training and the state's statutes, rules, and regulations (Hortz et al., 2019). They specialize in returning athletes to participation after injury and typically are the most involved healthcare professional in the injury treatment and rehabilitation process (Roh, 2000). Athletic trainers provide a wide range of services such as, primary care, injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions (Hortz et al., 2019). Athletes seek help from their athletic trainer not only for injuries, but also mental health concerns. Over half (64%) of the athletes questioned in a 2004 study by Washington-Lofgren et al. reported a preference in discussing their emotions with their athletic trainer, rather than a sports psychologist. Because of the frequency of interaction between the athlete and athletic trainer, athletic trainers are an ideal health care professional to address and assist with mental health concerns in their athletes (Arvinen-Barrow, 2014). Athletes report having a measure of trust with their athletic trainer which makes it more appealing for athletes to discuss mental health concerns with their athletic trainer, rather than a stranger or an individual they have less interaction with, such as a psychologist or psychiatrist. So, while the role of the athletic trainer is well-defined, there lacks clarity regarding the athletic trainers' role in addressing athlete mental health. This is due to the lack of mental health educational standards prior to 2020, so competencies and proficiencies related to mental health did not formally exist until then.

### *Psychology and Mental Health in Athletic Training*

The exact prevalence of mental health cases athletic trainers deal with is not known, but there is some research on the prevalence of mental health cases team physicians deal with. Mann et al. (2007) researched the types and frequency of psychological issues team physicians encounter when working with athletes. This study concluded that 88.4% of sports medicine physicians surveyed reported that they frequently encounter psychological issues with athletes, both in and out of season. If a majority of team physicians report frequently encountering mental health conditions with their athletes, then it can be assumed that athletic trainers will also frequently encounter these concerns.

There is vast variability in how mental health services are provided to NCAA Division 1 athletes and no standard of care for these concerns exists (Sudano & Miles, 2017). Within each individual organization, services available to student athletes varies and limits the continuity of mental health care athletic trainers can provide. Without standards in place to enforce mental health services available, athletic trainers and student athletes at different schools/organizations are disadvantaged. There must be a standard present in the availability of resources so that student-athletes are given equal opportunity to receive mental health care. Having equal access to resources will allow athletic trainers to provide better mental health care to their athletes and improve athletic trainers' confidence in their referral abilities.

The negative psychological effects of athletic injury are heavily documented in the literature (Andersen & Williams, 1988; Glazer, 2009; Wiese & Weiss, 1987). Sports medicine teams typically focus on the injury alone and disregards the mental health issues that may coexist with athletic injury (Glazer, 2009). For example, when an athlete is injured, the primary focus is

on treating and rehabilitating that specific injury so that the athlete may return to play. What is usually overlooked is the potential depression or anxiety that may accompany the injury. The psychological impact of injuries should be given more attention, because research has shown that returning athletes to play before they are ready psychologically can lead to anxiety, depression, re-injury, and poor performance (Glazer, 2009).

Once injury does occur, it is difficult to predict the psychological response of the athlete, especially when the severity of the injury may influence the athlete's cognitive and emotional reaction (Wiese et al., 1991). Andersen and Williams' stress and injury prediction model (1988) identifies injury-prone athletes often experience psychosocial factors that affect injury and recovery. For example, when a stressful situation arises, an athlete with many stressors in their life may be at a higher risk of injury (Andersen & Williams, 1988). This further shows that athletic trainers can prevent and reduce injury risk by being able to help their athletes effectively cope with stress and mental health issues. Another model is the biopsychosocial model of patient care for sport injury and rehabilitation, which helps describe how athletic trainers (and other members of the sports medicine team) influence athlete mental and physical health (Borrell-Carrio, 2004; Engel, 1980). This model demonstrates the influences on athlete mental health, focusing on the way mental and physical experiences interplay with one another (DeFreese & Barczak-Scarboro, 2017). Psychosocial factors, such as support from an athletic trainer, fit into the model regarding initial injury response and injury rehabilitation outcomes. Adequate support from athletic trainers represents a key variable in the overall health and wellbeing of athletes, both injured and healthy, with implications for mental health outcomes. It is the role of the individuals caring for the athlete to address not only the physical injury, but also the psychological injury, as the link between the two effects the outcomes of both.

While the mental health of athletes remains an underdeveloped aspect of athletic training research, the recognition of the role of the AT encompassing athlete's psychological needs is growing. Current research continues to show that athletes are relying on their athletic trainers for mental health support (Arvinen-Barrow, 2016). The need for mental health education for athletic trainers was formally addressed by the 2020 CAATE standards 77 and 94: "Identify, refer, and give support to patients with behavioral health conditions. Work with other health care professionals to monitor these patients' treatment, compliance, progress, and readiness to participate" and "Develop and implement specific policies and procedures for the purposes of identifying patients with behavioral health problems and referring patients in crisis to qualified providers", but these standards are limited in detail. Implementation of these new standards is unclear, thus allowing for vast variability in how these standards are to be taught to athletic training students.

### ***Educational Preparation of Athletic Trainers***

Athletic trainers receive two different types of education: collegiate (during their athletic training program) and post-collegiate/post-certification (NATA, 2019). Post-collegiate education includes continuing education units (CEUs) and athletic trainers are required to complete 50 CEUs every two years (NATA, 2019). There is not existing literature on the efficacy outcomes between the two types of education for athletic trainers, nor is there any literature that distinguishes between the two types of education as it pertains to psychology and mental health. The literature on educational preparation and psychology in athletic training indicates that athletic trainers do attempt to address mental health or psychological issues with their athletes, but they do not feel comfortable or proficient in doing so based on their lack of education in these areas (Barefield & McAllister, 1997; Wiese & Wiess, 1987; Stiller-Ostrowski &

Ostrowski, 2009). This issue clearly outlines the educational gap in mental health faced by athletic trainers which can impact confidence and performance of the athletic trainer.

Misasi et al. (1996) sought to determine the academic preparation of athletic trainers in regards to their role as a counselor. They stated that education of athletic trainers should include counseling and mental health preparation and certified athletic trainers should seek out courses or workshops that address counseling situations in the athletic setting. Athletic trainers who did not, or will not, receive formal or collegiate education on mental health are left to find courses or workshops on their own. This creates a new challenge, especially when only 2% of CEUs offered in 2021 related to mental health. Stiller-Ostrowski and Ostrowski (2009) found that undergraduate athletic training students report feeling underprepared in dealing with athlete issues related to mental health, so they concluded that athletic training education within psychology needed improvement. This further highlights the current gap in AT psychological-education, which has been caused by a history of limited education - pertaining to mental health - available to athletic trainers. These two studies discuss the importance of psychology education for athletic trainers, but without distinction regarding specific standards.

In research on the academic preparation of athletic trainers to address mental health with their athletes, less than half of the participants within three separate studies reported academic preparation on mental health (Stiller-Ostrowski & Ostrowski, 2009; Misasi et al., 1996; Moulton et al., 1997). Stiller-Ostrowski & Ostrowski (2009), reported that none (0%) of the athletic trainers surveyed received academic preparation on mental health. Further, less than half (36.4%) of the participants reported taking a formal psychology course (Stiller-Ostrowski & Ostrowski, 2009; Misasi et al., 1996; Moulton et al., 1997). In another study on academic preparation of athletic trainers in the area of counseling, research indicated that many athletic trainers do not

feel they possess the level of competency necessary to translate the psychology education they have received into clinical practice (Roh & Perna, 2000). This research further supports the need for more clearly defined standards on mental health education for athletic trainers, so that the education received is standard from program-to-program and the skills taught can be translated into clinical practice. Mandated mental health education is anticipated to increase confidence in addressing athlete mental health.

### *Confidence and Self-Efficacy of Athletic Trainers*

Self-efficacy is a construct in psychology that is defined as one's belief in his or her ability to succeed in specific tasks or situations (Bandura, 1977). Bandura argued that "through cognitive representation of future outcomes individuals can generate current motivators for behavior" (p.193, 1977). Self-efficacy was developed within the framework of the social cognitive theory and has been applied to many domains within psychology, such as sports and athletics. This construct is thought to be one of the most influential constructs that affects athletic achievement (Feltz, 1999; Mortiz et al., 2000). For this project, "self-efficacy" is interchangeable with "confidence" as suggested by Bandura (2006).

Self-efficacy is developed through four different sources (Bandura, 1977). The first one is prior experience, which is needed for mastering or accomplishing tasks and called efficacious action. Bandura states that opportunities for efficacious actions and increased self-efficacy share a linear relationship as efficacy beliefs build over the course of one's life. Bandura also states that "The most effective way of developing a strong sense of efficacy is through mastery experiences" (Bandura, p.1175; 1989). The second source is vicarious experiences, in which one develops self-efficacy through observing others perform the same task. Individuals learn from both their own experiences and those of others. Behaviors that result in positive outcomes are

likely to be modeled by others observing those actions. The third source is verbal persuasion, which means one's sense of self-efficacy can be strengthened by verbal (and other forms) of persuasion by peers (Bandura, 1977). The last source is one's physiological state or physiological responses, such as one's "fight or flight" response. Feelings of fear or anxiety, and/or the inability of someone to imagine they can successfully accomplish a task, can lead to a total avoidance of the task (Bandura, 1977).

The self-efficacy construct explains how sources of past performance, vicarious experiences (i.e. observing someone else), and verbal persuasion influence a person's self-efficacy, which leads to the performance outcomes of increased effort, enjoyment, motivation, attributions, and persistence. A premise of self-efficacy is that people base their current performance and expectations on past experiences. For example, if an athletic trainer assists an athlete with a mental health concern, then all future experiences with athlete mental health will be influenced by their previous experience. Past experiences determine the level of confidence/self-efficacy an individual has with future experiences.

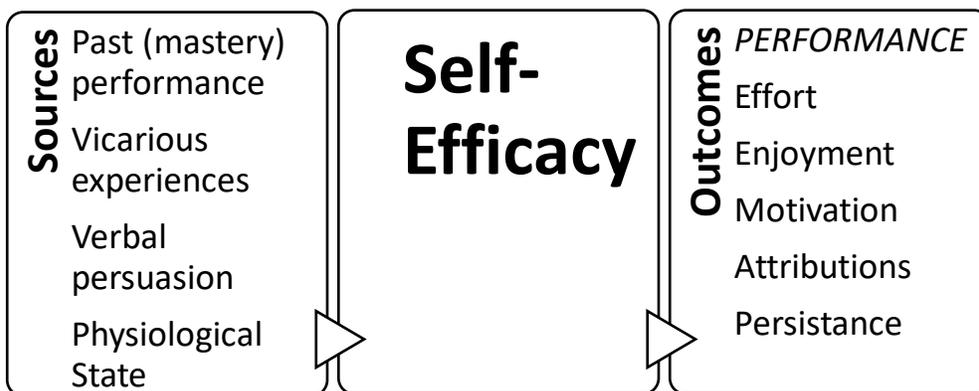
In competitive settings, such as sport, research has supported the idea that higher levels of self-efficacy positively affect performance on an activity (Feltz et al., 2008). During performance, Bandura (1977) argues that individuals must have a strong belief in their performance self-efficacy in order to succeed with the best possible outcomes. Vealey et al. (1998) stated that athletes seek confidence through past mastery performance, social support, and vicarious experiences. Studies have also been conducted to examine self-efficacy in coaching strategies. Coaches who had higher efficacy beliefs for their teams perceived that they had more control over their teams' outcomes (Feltz, 1999). This can be related to athletic trainers in how they serve as a support system to their athletes. If athletic trainers have higher efficacy beliefs in

their abilities to identify, refer, and give support to their athletes with mental health issues, then they may also perceive that they have more control over the outcome of their athletes' mental health concerns.

Studies on self-efficacy in healthcare settings, specifically as it relates to physicians, report that providers rely heavily on past mastery performance and vicarious experiences for confidence in treating their patients (Ryan et al., 2013). While research on self-efficacy of athletic trainers is limited, it can be inferred that sources of self-efficacy for athletic trainers will be similar to that of athletes, coaches, and other healthcare providers. The link between sources and outcomes of the self-efficacy construct relates to how athletic trainers seek confidence in their performance of addressing athlete mental health. Figure 1 outlines the different sources and outcomes of self-efficacy.

**Figure 1**

*Bandura's Self-Efficacy Model*



(Bandura, 1977)

Athletic trainers' self-efficacy in addressing athlete mental health is dependent upon many sources, but the lack of education in this area is assumed to greatly affect outcomes of subjective performance, as outlined in Bandura's (1977) model. Education can include several sources of self-efficacy, such as past mastery performance, modeling and vicarious experiences, experience controlling and reducing physiological responses, and verbal persuasion (Schunk, 1984). Effective education in a topic can increase self-efficacy in those who received the education; therefore, increasing the performance outcomes of those individuals for that topic. Individuals who hold a low sense of efficacy in a specific area may attempt to avoid performing tasks within that area altogether (Schunk, 1984). The 2020 CAATE standards on mental health require athletic trainers to adequately perform 5 competencies upon the completion of their athletic training education: identify, refer, and give support to patients with behavioral health conditions and develop and implement specific policies and procedures for the purposes of identifying patients with behavioral health problems and referring patients in crisis to qualified providers. Without prior education that addresses these standards - and the lack of current educational opportunities to address these standards - athletic trainers that graduated before 2020 are missing the first, and arguably most influential, source of self-efficacy for assisting athletes with mental health concerns.

### *Summary*

Current literature supports the need for increased educational training within psychology for athletic trainers, and while the new 2020 CAATE standards may help to provide this increase, there is a lack in the scope and detail. If athletic trainers are expected to create policies and procedures for recognizing mental health concerns and serve as the first-line of care for

athletes when mental health issues arise, then there needs to be more resources and direction on the implementation of these standards along with educational opportunities for already certified athletic trainers. Although the new CAATE standards are likely going to increase mental health education for athletic trainers, the lack of these standards until 2020 has created a gap in the skillsets between newly certified and currently practicing athletic trainers. This education gap needs to be addressed in order to provide athletes with the most up-to-date best practices in sports medicine care by their athletic trainers. Many athletic trainers lack psychological or mental health education which creates a barrier to psychological healthcare access for their athletes (Misasi et al., 1996). Without a method to alleviate this gap and clear guidelines for how these new educational standards will be put into place, athletic trainers will continue to lack the education and confidence in addressing mental health conditions with their athletes.

## **Chapter III: METHODS**

### ***Introduction***

Athletic trainers are integral members of the sport medicine team and should be well educated on mental health in order to confidently and proficiently address it with their athletes. The purposes, hypotheses, and analyses of this study are provided in Table 1. To test these hypotheses, a questionnaire adapted from previous literature (i.e., Mann et al., (2007), Misasi et al., (1996), and Vaughan et al., (2004)) was created to identify mental health conditions encountered, mental health education received, confidence, and subjective performance of athletic trainers on addressing mental health concerns with their athletes. This section provides a summary of participants, inclusion/exclusion criteria, instruments, procedures, data analysis, and statistical analysis used to test the hypotheses.

### ***Participants***

One thousand participants were randomly selected from the National Athletic Trainers' Association (NATA) Research and Education Foundation. The participants were certified athletic trainers who maintained an active membership in the NATA in 2021. The email addresses of the randomly selected athletic trainers were acquired through the NATA public database as approved through the NATA board of directors for research and education purposes. One thousand participants are the maximum number permitted for release of information for the purposes of web-based graduate research (NATA, 2019). There were no restrictions on gender, job setting, education level, or years of experience, but all participants were over the age of 18. All procedures in this study were approved by the East Carolina University Internal Review Board (IRB) and all participants indicated consent prior to the start of the survey through an IRB Exempt Study Consent paragraph.

**Table 1***Purposes, Hypotheses, and Analyses*

	<b>Purpose</b>	<b>Hypothesis</b>	<b>Analysis</b>
<b>1</b>	Determine what level of (a) collegiate and (b) post-collegiate education ATs have received on mental health. Part A: <b>Collegiate</b> education includes courses taken at a college or university in which you received credit Part B: <b>Post-Collegiate</b> education includes CEU opportunities, seminars, lectures, conferences, etc. completed post-BOC certification	ATs have received little (a) collegiate and (b) post-collegiate education on mental health. Part A: <b>Collegiate</b> education includes courses taken at a college or university in which you received credit Part B: <b>Post-Collegiate</b> education includes CEU opportunities, seminars, lectures, conferences, etc. completed post-BOC certification	Frequency counts & descriptives
<b>2</b>	Determine what level of experience ATs have with assisting athletes with mental health concerns	ATs have moderate experience with athletes that have mental health concerns	Frequency counts & descriptives
<b>3</b>	Evaluate the level of confidence ATs feel in addressing athlete mental health concerns	ATs have low levels of confidence in addressing athlete mental health concerns	Frequency counts & descriptives
<b>4</b>	Evaluate the level of subjective performance of ATs assisting athletes with mental health concerns	ATs will report low levels of subjective performance in assisting athletes with mental health concerns	Frequency counts & descriptives
<b>5</b>	Examine the extent to education, confidence, subjective performance, and experience will be associated (looking at the following 5 competencies: identify, refer, support, develop, implement).	Education (collegiate and post-collegiate), confidence, subjective performance and experience will be associated (looking at the following 5 competencies: identify, refer, support, develop, implement).	Correlations
<b>6</b>	Examine if level of education (collegiate/post collegiate separately) will be associated with confidence and subjective performance of the outcomes to (a) Identify,	The high collegiate education group will have significantly higher confidence and subjective performance compared to the low collegiate	One-way ANOVA using a

	<p>refer, support athletes with mental health concerns and (b) Develop &amp; implement policies and procedures for assisting athletes with mental health concerns</p>	<p>education group on the outcomes to (a) Identify, refer, support athletes with mental health concerns and (b) Develop &amp; implement policies and procedures for assisting athletes with mental health concerns</p> <p>The high post-collegiate education group will have significantly higher confidence and subjective performance compared to the low post-collegiate education group on the outcomes to (a) Identify, refer, support athletes with mental health concerns and (b) Develop &amp; implement policies and procedures for assisting athletes with mental health concerns</p>	<p>split-half approach to create a high and low education group</p>
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### ***Inclusion Criteria for Participants***

1. Aged 18 years or older.
2. Currently a certified athletic trainer.
3. NATA member in 2021

### ***Exclusion Criteria for Participants***

1. Under the age of 18 years old.
2. Non-certified student members of the NATA.
3. Non-athletic trainer members of the NATA (i.e., physical therapists, physicians, etc.)

### ***Instruments***

The survey, *Certified Athletic Trainers' Mental Health Experiences Questionnaire* (see Appendix A), was administered through an online survey service to evaluate athletic trainers' frequency, confidence, and proficiency in addressing mental health concerns with their athletes and their levels of education received on mental health concerns. This instrument is an adaptation of the *Sports Medicine Sport Psychology Survey* (Mann et al., 2007), the *Academic Preparation of Athletic Trainers as Counselors Survey* (Misasi et al., 1996), and the *Athletic Trainers' Confidence in Helping Female Athletes with Eating Disorders Survey* (Vaughan et al., 2004). The survey, *Certified Athletic Trainers Mental Health Education Questionnaire*, consists of five sections as described subsequently.

**Demographics.** The first section of the survey instrument contained basic demographic information and further information unique to athletic trainers. These questions were adapted from all three original surveys and included gender identification, age, job setting, highest level of education earned, years of experience, type of athletic training education program (ATEP) attended, and geographic region of work.

**Clinical Experience.** This second section assessed the frequency (using a 0-10 Likert scale - never: 0, rarely: 3, sometimes: 5, often: 8, very often: 10) of athletic trainers encountering specific mental health concerns, obtained from the Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> edition (DSM-5), with their athletes. This section also assessed whether athletic trainers use any mental health screening tools through a “yes” or “no” question with a free-response item for participants who selected “yes” to specify the name of the tool they use. Mann and colleagues’ (2007) survey was created from a literature review they conducted of psychological issues athletes commonly experience and was reviewed by five sports medicine physicians. This survey was intended to evaluate the frequency in which sports medicine physicians discussed psychological concerns with their patient-athletes. Like Mann et al.’s survey, the instrument used in this study measured the frequency and types of mental health concerns addressed, and was adapted to be relevant to athletic trainers.

**Education Received.** Misasi and colleagues’ (1996) survey sought to understand the education athletic trainers received to prepare them for serving in a counselor-type role for their athletes by asking how well they felt their education prepared them. The adaptations made from this survey to the current study’s survey included re-wording the answer choice types to fit the new 2020 CAATE educational standards, rather than a list of mental health concerns. The third section of this survey instrument evaluated the educational preparation on psychology and mental health that participants received. The first item in this section asked which type of Athletic Training Education Program (ATEP) they graduated from. The second item was a “select all that apply” question for psychology courses taken to assess which, if any, common psychology courses offered at universities athletic trainers have taken. The third, fourth, and fifth items asked which types of collegiate and post-collegiate psychology education ATs have

received and the approximate amount of credit-hours earned or hours completed. The sixth item assessed how each participant feels about their ATEP's preparation of performing the competencies listed in the 2020 CAATE educational standards through a 0-10 Likert scale (no preparation: 0, minimally prepared: 3, moderately prepared: 5, well prepared: 8, very well prepared: 10).

**Self-Efficacy.** Vaughan and colleagues' (2004) survey examined athletic trainers' confidence in addressing eating disorders with female athletes through an open-ended self-efficacy questionnaire. This survey was adapted to the current study by framing the questions to fit general mental health, rather than eating disorders alone, and was adapted into a 0-10 Likert Scale for confidence instead of being an open-ended response, modeled after Habeeb et al. (2019). This survey instrument evaluated the self-efficacy of participants' ability to address mental health with their athletes through asking participants how confident they feel performing the competencies listed in the 2020 CAATE educational standards on a 0-10 Likert scale (no confidence: 0, minimally confident: 3, moderately confident: 5, confident: 8, very confident: 10). Confidence is the term that was used in the questionnaire, rather than self-efficacy, based on Bandura's (2006) recommendation in his article on how to assess self-efficacy through a questionnaire.

**Subjective Performance.** The final section of this survey instrument assessed the subjective performance of the athletic trainers in their ability to perform the competencies listed in the 2020 CAATE educational standards. Participants were asked on a scale of 0-10 (unable to perform: 0, able to somewhat perform: 3, perform moderately well: 5, perform very well: 8, perform perfectly with no mistakes: 10) how well they feel they can perform the 2020 CAATE educational standard competencies at their current level of education on mental health.

### *Procedures*

Prior to the beginning of the study, a human subjects review was submitted to East Carolina University. Although the current survey has been adapted from prior surveys in the literature, the evidence of alpha levels for these surveys has not been published. The survey used in the current study was examined in a pilot study with 10 master's students at ECU and 8 certified ATs for content validity. Grammatical changes were made based on the reviews.

Permission to use NATA members for graduate research was obtained through the NATA Research Survey Service. The primary investigator was blinded to contact information of the participants due to the NATA randomly selecting the email addresses of potential participants. A cover email with an invitation to participate in the survey was sent to all randomly selected email addresses. The email invitation also included the link to access the online survey instrument. The first page of the survey instrument contains the consent paragraph that explains the voluntary participation of the survey.

The online survey system, Qualtrics, recorded the responses of the participants and sent them to the primary investigator. Qualtrics collected de-identified data to ensure confidentiality and security. The survey was open for eight total weeks, with a reminder email sent every two weeks. At the completion of the eight weeks, the data was transferred to Excel and SPSS for data analysis.

### *Data Analysis*

The data collected through this survey instrument was processed through SPSS to conduct descriptive statistics and correlational analysis. Three of the surveys (5.56%) were not fully completed – ending after the demographics section - so those responses were not included in the final analysis of the data. Descriptive statistics including means, medians, frequencies, and

modes, were calculated for demographics, clinical experience, education received, self-efficacy, and subjective performance. To examine if collegiate education, post-collegiate education, experience, and subjective performance are associated – looking at the following five competencies: identify, refer, support, develop, and implement, a correlational analysis was conducted. To examine if level of education (collegiate and post-collegiate separately) is associated with confidence and subjective performance of the outcomes to (a) Identify, refer, support athletes with mental health concerns and (b) Develop & implement policies and procedures for assisting athletes with mental health concerns, a one-way MANOVA using a split-half approach to create a high and low education group was conducted. Box's Test was performed to indicate the covariances in the high education versus the low education groups. The Pillai's Trace criterion was used as a robust test statistic. Follow-up univariate tests were performed to assess the individual types of efficacy between the low and high education groups. The (Partial) Eta Squared ( $\eta^2$ ) standard effect sizes (small = 0.01, medium = 0.06, large = 0.14) were used to evaluate effect sizes of the one-way MANOVA.

## Chapter IV: RESULTS

### *Demographics*

A total of 54 (16 male, 38 female) out of 1,000 ATs responded to the invitation emails sent, yielding a response rate of 5.4%. Three of the surveys were not fully completed (5.56%), so those responses were not included in the final analysis of the data. All three incomplete surveys stopped after the demographics section, which may be due to the NATA's random survey distribution to athletic training students or non-ATs. All other survey responses indicated that the respondent was a certified athletic trainer. The ages of the respondents were from 22-52 years of age, with a mean age of 30.67. The average number of years the respondents have been working as certified athletic trainers is 7.85 years, ranging from 1-28 years (median: 14; SD: 6). The sample was composed of 19 secondary school/high school ATs (35.19%), 28 university/collegiate ATs (51.85%), 6 clinic/hospital/outreach ATs (11.11%), and 1 AT in other settings (Collegiate Faculty; 1.85%) for their primary work setting. For secondary work settings, there were 7 secondary school/high school ATs (13.46%), 4 university/collegiate ATs (7.69%), 8 clinic/hospital/outreach ATs (15.38%), 2 ATs in other settings (Industrial & Per Diem; 3.85%), and 31 ATs that did not have a secondary work setting (59.62%). Descriptive statistics including means, medians, frequencies, and modes, were calculated for demographics, education received, clinical experience, confidence, and subjective performance.

### *Education – Purpose 1*

The majority ( $n=37$ , 71.15%) of respondents had achieved a master's degree. More than half ( $n=38$ , 82.6%) of all subjects had completed an introduction to psychology course and 73.9% ( $n=34$ ) had completed a sports psychology course (Table 2). Table 3 shows the amount of credit hours of collegiate psychology education the surveyed athletic trainers completed, with a

majority (21.7%) completing at least 3 credit hours. Tables 4 and 5 pertain to post-collegiate education and show the types of education, with CEUs and conference sessions being the most common (52.2% and 45.7%, respectively). A majority of respondents completed 2 or less post-collegiate psychology courses. Figure 2 shows the levels of preparation athletic trainers report, based on their education alone. Referral is the highest mean (6.24), but the overall means are lower compared to confidence and subjective performance of the same competencies.

**Table 2**

*Collegiate Psychology Education Courses Taken*

<b>Course</b>	<b>Frequency</b>	<b>Percent (%)</b>
Intro to Psych	38	82.6
Sports Psych	34	73.9
Developmental Psych	15	32.6
Abnormal Psych	10	21.7
Other	8	17.4
Into to Counseling	3	6.5
Adolescent Psych	3	6.5
Group Facilitation	2	4.3
Multicultural Psych	2	4.3
Group Dynamics	1	2.2
None	0	0

*Note.* “Psych”: Psychology

**Table 3**

*Frequencies (%) of Collegiate Psychology Education Credit Hours Taken*

<b>Credit Hours</b>	<b>Frequency</b>	<b>Percent (%)</b>
2	3	6.5
3	10	21.7
4	2	4.3
6	9	19.6
8	2	4.3
9	5	10.9
10	3	6.5
12	1	2.2
15	1	2.2
18	1	2.2
21	2	4.3
48	2	4.3
50	1	2.2

**Table 4**

*Post-Collegiate Psychology Education Types Taken*

<b>Type</b>	<b>Frequency</b>	<b>Percent (%)</b>
CEU Courses	24	52.2
Conference Session	21	45.7
Workplace Seminar	18	39.1
None	13	28.3
Organized Lecture	8	17.4

**Table 5***Frequencies (%) of Post-Collegiate Psychology Education Taken*

<b># of Completed Courses</b>	<b>Frequency</b>	<b>Percent (%)</b>
0	11	23.9
1	5	10.9
2	5	10.9
4	1	2.2
5	4	8.7
6	1	2.2
8	1	2.2
10	4	8.7
12	1	2.2
22	1	2.2
25	1	2.2
30	3	6.5
40	1	2.2

***Experience – Purpose 2***

Table 6 shows the frequencies (on a 0-10 scale) of mental health conditions athletic trainers experience with their athletes. The most common conditions (>5; 5 = sometimes) were ADHD/ADD, anxiety, and depression.

**Table 6***Frequencies of Athlete Mental Health Conditions Encountered by ATs*

<b>Condition</b>	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>
ADHD/ADD	6.48	1	10
Anxiety Disorder	6.11	0	10
Depression	5.09	0	10
Body Dysmorphia	3.32	0	10
Disordered Eating	3.20	0	9
Addictions	2.98	0	10
OCD	1.93	0	9
Self-Harm	1.80	0	7
Suicidal Ideation	1.60	0	8
Bipolar Disorder	1.20	0	8
Mania	0.97	0	7
Psychosis	0.92	0	7
Schizophrenia	0.49	0	6
BPD	0.47	0	5
DID	0.03	0	1

*Note.* ADHD/ADD: Attention Deficit Hyperactivity Disorder/Attention Deficit Disorder  
 OCD: Obsessive Compulsive Disorder  
 BPD: Borderline Personality Disorder  
 DID: Dissociative Identity Disorder

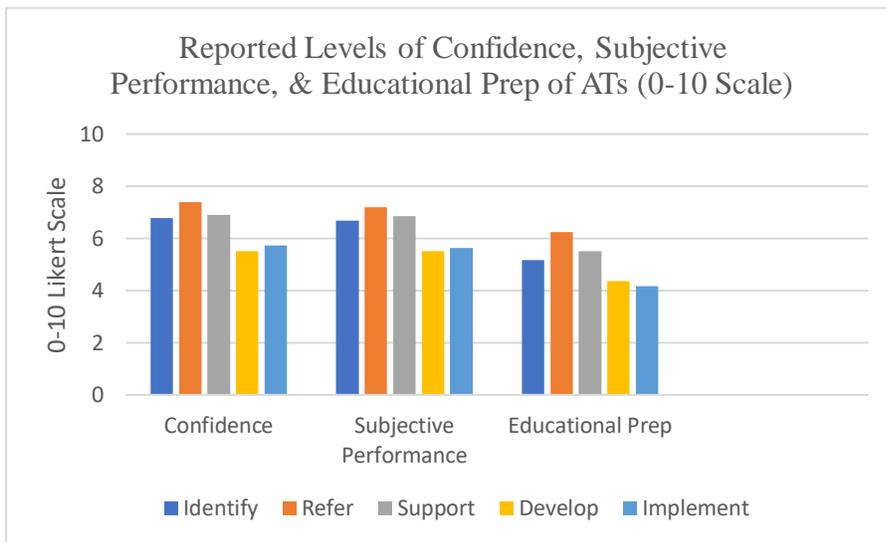
***Education, Confidence, and Subjective Performance – Purposes 3-5***

Figure 2 shows levels of confidence (0-10 scale) reported by athletic trainers on their abilities to perform the 5 competencies in the 2020 CAATE mental health standards: identify, refer, support, develop, and implement. Surveyed athletic trainers reported feeling the most confident (mean = 7.39) in their abilities to refer athletes to a qualified mental health provider than any of the other competencies. On average, the surveyed ATs reported feeling only moderately confident (5/10) in their abilities to develop (5.50) and implement (5.74) policies and procedures for the purposes of identifying athletes with mental health problems. Figure 2 also shows subjective performance of the 5 competencies reported by surveyed athletic trainers, with “refer” again being the highest mean (7.20) and “develop” and “implement” being the lowest

(5.52 and 5.64, respectively). Lastly, Figure 2 shows the levels of preparation athletic trainers report, based on their education alone. Referral is again the highest mean (6.24), but the overall means are lower compared to confidence and subjective performance of the same competencies.

**Figure 2**

*Reported Levels of Confidence, Subjective Performance, & Educational Preparation of Athletic Trainers*



To examine the extent to which education, experience, and subjective performance are associated – looking at the following five competencies: identify, refer, support, develop, and implement - a correlational analysis was conducted (Table 7). Scatterplots were first created to rule out outliers that may be affecting the association (Appendix B). Education-performance ( $r = 0.55-0.69$ ) and education-confidence ( $r = 0.62-0.68$ ) were positively, moderately correlated for the 5 competencies, while confidence-performance ( $r = 0.81-0.94$ ) was positively, strongly correlated for the 5 competencies.

**Table 7**

*Pearson R Correlations of Education, Experience, and Subjective Performance*

<b>Task</b>	<b>Pearson Correlations</b>		
	<i>Confidence- Performance</i>	<i>Education- Confidence</i>	<i>Education- Performance</i>
Identify	.89	.62	.57
Refer	.91	.66	.59
Support	.81	.62	.55
Develop	.91	.68	.62
Implement	.94	.67	.69

### ***Purpose 6***

To further examine if level of education (collegiate and post-collegiate separately) is associated with confidence and subjective performance of the outcomes to (a) Identify, refer, support athletes with mental health concerns and (b) Develop & implement policies and procedures for assisting athletes with mental health concerns, a one-way MANOVA using a split-half approach to create a high and low education group was conducted. The low collegiate education group included those who had completed 2-6 credit hours of psychology education and the high collegiate education group included those who had completed 8-50 credit hours of psychology education. The low post-collegiate education group included those who had completed 0-2 psychology courses and the high post-collegiate group included those who had completed 4-40 psychology courses.

A one-way MANOVA was conducted to examine the effect of collegiate psychology education on the five types of confidence previously listed. Box's Test indicated the covariances were significantly different in the high education versus the low education groups, with the high education group reporting higher levels of confidence for all 5 competencies (report  $F = 1.88$ ,  $p = .021$ ). The Pillai's Trace criterion was used as a robust test statistic due to the small sample

size. Using Pillai's trace, there was not a significant effect of collegiate education on level of confidence,  $V = .107$ ,  $F(5, 33) = .792$ ,  $p = .563$ ,  $\eta^2 = .107$ . There was a medium partial eta squared effect size (small = 0.01, medium = 0.06, large = 0.14), but no significant effect for the overall difference in efficacy and follow-up univariate tests indicated no significant effects for individual types of efficacy ( $p = .150 - .587$ ).

A second one-way MANOVA was conducted to examine the effect of post-collegiate psychology education on the five types of confidence. Box's Test indicated the covariances were significantly different in the high education versus the low education groups, with the high education group reporting higher levels of confidence for all 5 competencies (report  $F = 1.87$ ,  $p = .022$ ). The Pillai's Trace criterion was used as a robust test statistic due to the small sample size. Using Pillai's trace, there was not a significant effect of post-collegiate education on level of confidence,  $V = .22$ ,  $F(5, 32) = 1.757$ ,  $p = .150$ . There was no significant effect for the overall difference in efficacy; however, follow-up univariate tests indicated some significant effects for individual types of efficacy. There was a significant difference between the low and high education groups for identify ( $F(1, 36) = 5.021$ ,  $p = .031$ ,  $\eta^2 = .122$ ), support ( $F(1, 36) = 7.425$ ,  $p = .010$ ,  $\eta^2 = .171$ ), develop ( $F(1, 36) = 4.840$ ,  $p = .034$ ,  $\eta^2 = .119$ ), and implement ( $F(1, 36) = 4.580$ ,  $p = .039$ ,  $\eta^2 = .113$ ), but not refer ( $F(1, 36) = 2.608$ ,  $p = .115$ ,  $\eta^2 = .068$ ). Identify, support, develop, and implement had large partial eta squared effect sizes and refer had a medium effect size. Caution should be used when interpreting these univariate effects because the multivariate effect was not significant.

## **Chapter V: DISCUSSION AND CONCLUSION**

The intent of this study was to (1) determine what level of (a) collegiate and (b) post-collegiate education ATs have received on mental health, (2) determine what level of experience ATs have with assisting athletes with mental health concerns, (3) evaluate the level of confidence ATs feel in addressing athlete mental health concerns, (4) evaluate the level of subjective performance of ATs assisting athletes with mental health concerns, (5) examine the extent to which collegiate education, post-collegiate education, confidence, subjective performance, and experience will be associated (looking at the following competencies):

- (a) Identify, refer, support athletes with mental health concerns and
- (b) Develop & implement policies and procedures for assisting athletes with mental health concerns,

and (6) examine if level of education (collegiate and post collegiate) is associated with confidence and subjective performance of the outcomes to:

- (a) Identify, refer, support athletes with mental health concerns and
- (b) Develop & implement policies and procedures for assisting athletes with mental health concerns.

### ***Education***

Of the respondents of the survey in this study, more than half of all subjects had completed an introduction to psychology course and/or a sports psychology course. This shows that many athletic trainers have had at least some collegiate psychology education. These results are similar to the Misasi et al. (1996) study on the educational preparation of athletic trainers as counselors, in which 93% of surveyed athletic trainers reported taking an introduction to psychology course and 59% reported taking a sports psychology course. Interestingly, athletic

trainers reported the lowest overall averages for the 5 competencies (identify, refer, support, develop, implement) in how well their collegiate education prepared them, compared to confidence and subjective performance. The relationships between education-confidence and education-performance in this study were moderately correlated (Table 7), further highlighting the importance of mental health education on self-efficacy of athletic trainers addressing mental health concerns with their athletes. Based on these results, it can be speculated that variables such as past performance, post-collegiate education, vicarious experience, and other experiences are responsible for the higher reported outcomes of confidence and subjective performance, rather than collegiate education alone.

Five of the respondents had completed 21-50 credit hours of psychology courses in their collegiate education experience, which likely influenced the results and increased the overall ratings of confidence and subjective performance. Those with higher levels of psychology education will typically have higher levels of confidence and subjective performance, which further strengthens the argument that increased psychology education can improve self-efficacy of athletic trainers addressing athlete mental health.

### ***Experience***

This study established that the psychological issues most commonly encountered by ATs were ADD/ADHD, anxiety, depression. These issues were similar to the most discussed issues by physicians which included stress, anxiety, burnout, disordered eating or body image, and depression (Mann et al., 2007). This finding may speak to the similarities in the perceived role a team physician and an AT play in the athlete's personal life. All respondents reported addressing at least one mental health concern with an athlete, which fits into the self-efficacy model as past (mastery) performance (Bandura, 1977). As previously discussed, past performance is believed

to be the most influential source of self-efficacy, which can explain the higher levels of reported self-efficacy (confidence) by respondents, regardless of education level.

### *Confidence*

The athletic trainers surveyed in this study reported moderate-high levels of confidence in their abilities to perform the five competencies outlined in the 2020 CAATE standards (Table 4). Respondents felt more confident in their abilities to identify, refer, and support athletes with mental health concerns, rather than developing and implementing policies and procedures that address athlete mental health concerns. This may be due to athletic trainers' ability to use past, mastery performance of identifying, referring, and supporting athletes with non-psychology related issues to increase self-efficacy. It would be more difficult to utilize past performance of developing and implementing policies and procedures (pertaining to non-mental health related conditions) for mental health conditions due to the vast difference between physical and mental health conditions and how they are treated. It may also be due to the lower levels of experience with policies and procedures, as not every athletic trainer has as much experience with policies and procedures as they do with identifying, referring and supporting athletes with injuries or illness.

The literature on educational preparation and psychology in athletic training indicates that athletic trainers do attempt to address mental health or psychological issues with their athletes, but they do not feel comfortable or proficient in doing so based on their lack of education in these areas (Barefield & McAllister, 1997; Wiese & Wiess, 1987; Stiller-Ostrowski & Ostrowski, 2009). In another study on academic preparation of athletic trainers in the area of counseling, research indicated that many athletic trainers do not feel they possess the level of competency necessary to translate the psychology education they have received into clinical

practice (Roh & Perna, 2000). The results of the aforementioned studies vary compared to the results of this study, but this study surveyed levels of confidence on particular competencies, rather than a general ability to address mental health. This survey's results are specific to the 2020 CAATE standards on mental health, whereas the prior studies provide a more general application. Interestingly, athletic trainers' confidence in addressing athlete mental health has not improved much since the 1987 Wiese and Wiess study which found that athletic trainers do not feel comfortable or proficient in addressing athlete mental health. This further highlights the importance of mental health educational opportunities for athletic trainers, so that confidence in this area will begin to improve.

Per the results of this study, there was not a significant association of collegiate education or post-collegiate education on level of confidence; however, there was a significant difference between the low and high education groups for identify, support, develop, and implement, but not refer. Caution should be used when interpreting these univariate effects because the multivariate effect was not significant. These results show that while a majority of athletic trainers are most confident in their ability to refer athletes for mental health conditions, the athletic trainers who had less psychology education report lower levels of confidence in their abilities to identify and support athletes with mental health concerns and develop and implement policies on athlete mental health. The lack of standardized education on mental health for athletic trainers until 2020 has created varying levels of care (pertaining to mental health) provided by athletic trainers to their athletes and patients. Athletic trainers are most comfortable in their abilities to refer, which could be due to the experience they possess in the referral of other health conditions. Based on the results of this study, more opportunities for psychology education

(specific to the CAATE standards) will help to increase athletic trainer confidence in the other four competencies.

### ***Subjective Performance***

The Pearson r correlations between confidence and performance for the 5 competencies (identify, refer, support, develop, implement) showed that they are positively, strongly correlated (Table 7). The self-efficacy construct explains how higher levels of confidence result in higher levels of performance in a particular area. The surveyed athletic trainers reported their highest levels of subjective performance in their abilities to “refer” and lowest in performance of “develop” and “implement”, which compares to the reports of confidence (and shown in the Pearson r correlation for confidence and subjective performance). Based on these results, psychology education for athletic trainers should place an emphasis on increasing confidence in developing and implementing policies and procedures for athlete mental health.

### ***Additional Findings***

Based on the results of the survey, it was found that only 34.04% of athletic trainers use a mental health screening tool in their job. These screening tools include the PHQ-9 and NCAA survey tools for athlete mental health. These results further highlight the gap in mental health care for athletes as it relates to the 2020 CAATE Standards on athlete mental health. Without regular use of screening tools by athletic trainers, the “identify” standard becomes more difficult as athletic trainers are only using subjective judgment, rather than an objective screening tool. This also supports the hypothesis that athletic trainers are not as confident in their abilities to develop and implement policies and procedures for athlete mental health.

Over half (55.56%) of surveyed athletic trainers reported that more psychology education would “definitely help” (5 on 0-5 scale) them in their jobs. The rest of the surveyed athletic

trainers reported the following: 28.89% of respondents reported a 4, 8.89% reported a 3 (somewhat help), 4.44% reported a 2, 0% reported a 1, and 2.22% ( $n= 1$ ) reported a 0 (no help).

These results further strengthen the argument for more athletic trainer psychology education.

### ***Applications***

The results of this study show that athletic trainers are the most confident in their abilities to refer but are less confident in the other four competencies in the 2020 CAATE Standards on mental health (identify, support, develop, and implement). These four competencies can be addressed through both collegiate and post-collegiate education. By offering more CEUs on mental health, which is needed based on the lack of CEUs offered that address mental health topics, current certified athletic trainers can choose to further educate themselves on the areas they lack confidence in. An expert within the field of sports psychology would be the best instructor and/or developer for the CEUs on athlete mental health. The topics to be covered within these CEUs should include identifying, referral, and support of athletes with mental health conditions and the development and implementation of policies and procedures on athlete mental health.

These results also provide guidance to athletic training educators on which standards may need to be addressed more than others. Developing and implementing policies and procedures on athlete mental health were the lowest rated competencies across the board. This shows that more education (both collegiate and post-collegiate) and resources on the development and implementation of policies and procedures would be beneficial to athletic trainers. Many newly certified athletic trainers may struggle with this due to the lack of experience in policies and procedures. These competencies are not highly focused on athletic training education and are primarily learned “on the job”. There are also limited resources available to athletic trainers on

developing and implementing policies and procedures, so preparation and experience varies drastically. Training and awareness on existing tools, such as the PHQ-9 or NCAA survey tools, should be available to all athletic trainers and/or a position or consensus statement on athlete mental health should be created.

### ***Limitations and Strengths***

The current study was restricted by the limitations of survey research. By using the NATA REF service, 1,000 ATs were given the option to be surveyed, and there was a relatively low response rate of 5.4%. It is speculated that the impact of COVID-19 on athletics and education during the time of this survey's distribution impacted the response rate. A low response rate may limit the ability to generalize the survey findings, especially with five of the respondents in this study having psychology minors or master's degrees in psychology. Another limitation of the study includes the potential of response bias. Athletic trainers who have a particular interest or strong experience in mental health may have been more willing to participate in this study. Additionally, this study was also limited to athletic trainers who are members of the NATA. An NATA membership is optional for athletic trainers, so non-members did not have an opportunity to participate in this study. Athletic trainers who are not NATA members may have reported lower levels of education, confidence, and subjective performance of the 5 competencies. Those who are NATA members have access to additional resources that may affect the confidence levels between the members and non-members. One other limitation of this study is that different types of experience (vicarious vs. actual) were not accounted for in the survey or controlled for during data analysis. Varying degrees of experience with psychology and mental health can impact the confidence levels of athletic trainers. The final limitation of this study is that all data collected is subjective. Subjective results from self-reported levels of

confidence and performance tend to be higher than actual objective measures of confidence and performance (Tempelaar et al., 2020). Based on this, it cannot be determined if the subjective results are a true reflection of objective performance measures.

The NATA REF service provides 1,000 free survey distribution emails, which allowed for the study to be conducted at no cost. A strength of this study is the specificity of the survey questions to match the 2020 CAATE Standards on mental health. This study sought to understand the educational preparation, experience, and confidence of athletic trainers as it pertains to the 5 competencies outlined in the CAATE Standards. Doing so, rather than asking more general questions, creates a baseline for education, experience, and confidence that can be used to compare to future research data after educational programs implement these new standards. This would allow CAATE and athletic training programs to note strengths and/or address weaknesses within the standards on mental health so that the educational implementation can be improved upon. Another strength of this study includes distinguishing between two types of education athletic trainers receive (collegiate and post-collegiate). No other currently published literature exists that distinguishes between the two types of athletic trainer education when looking at the association of education and self-efficacy. A final strength of this study is that data was collected on the most encountered mental health conditions athletic trainers face with their athletes. This type of data has not been collected in over ten years, so it provides current data on the mental health conditions athletes face.

### ***Future Research***

Future research should attempt to discover the effect of CEUs and conference sessions pertaining to mental health and psychology for athletic trainers' self-efficacy. Based on the results of this study, CEUs and conference sessions are the most popular form of post-collegiate

education for athletic trainers, so exploring the relationship between these types of education and self-efficacy can help to address weaknesses in post-collegiate psychology education for athletic trainers. This relationship could be explored through a survey/questionnaire distributed to athletic trainers both before and after a CEU opportunity or conference session to measure increases in self-efficacy. The CEU courses themselves can also be evaluated on their ratings of increased efficacy upon completion. This can help CEU providers distinguish between the most beneficial courses and CEU styles and the least beneficial CEUs. It can be speculated that conference sessions or in-person trainings led by a mental health professional or psychologist would be an effective CEU opportunity, due to the knowledge an expert in the psychology field can provide. The CEU opportunity that provides the most sources of self-efficacy (past performance, vicarious experiences, verbal persuasion, physiological state) will likely provide the most confidence for the athletic trainers that complete it.

Another area of future research is an observational study on athletic trainers' confidence and performance on addressing athlete mental health, specific to the 2020 CAATE Standards. An observational study would provide more objective data on athletic trainer performance and confidence and would also provide more depth and detail on the specific areas' athletic trainers struggle with as it pertains to athlete mental health. An observational study can include having athletic trainers address each of the 5 competencies in the CAATE standards with "model" athletes and then report levels of confidence and performance pre- and post-educational session. This can help researchers and athletic trainers figure out which educational methods work best to increase confidence for all 5 competencies.

Additionally, a study in which athletes and patients are surveyed about their own concerns with mental health and their confidence in their athletic trainers to address these

concerns could be beneficial to this area of research. While these results may be subjective, it could be interesting to compare athletic trainers' reported levels of confidence with their athletes' reported levels of confidence. Athletes and patients could also be surveyed on what they feel is lacking in terms of psychological healthcare or what improvements they would like to see. These results can be used to help athletic trainers and educators know which areas need the most focus or if they are missing something entirely. By going to the source of the condition (the athlete with mental health concerns) care can become more personalized and may even assist in the prevention of worsened mental health concerns.

A final area of future research is to study the teaching techniques implemented by athletic training educators on the 2020 mental health CAATE standards. By measuring self-efficacy of athletic training students after they have completed their program's version of addressing these standards, educators will have a better idea of what teaching methods are working best for other students. This may increase athletic trainer self-efficacy if educators are provided with resources and data on the most effective implementation of teaching the CAATE standards on mental health. Resources on effective implementation of these standards may also help to increase the self-efficacy of the educators teaching these standards.

### ***Conclusion***

Research has indicated that athletic trainers overall believe that psychology education is important to their education. Due to the nature of the job, including the amount of time spent with athletes and support ATs are expected to provide, it is not surprising that the ATs surveyed reported moderate-high levels of confidence and subjective performance in their abilities to perform the five competencies (identify, refer, support, develop, & implement) outlined in the 2020 CAATE standards for mental health education. The athletic trainers surveyed reported the

highest levels of confidence and subjective performance in their abilities to identify, refer, and provide support to athletes with mental health conditions, rather than developing and implementing policies and procedures on athlete mental health. The surveyed athletic trainers also reported lower means for their educational preparation of these five competencies, showing that the higher levels of perceived confidence and performance of these competencies is likely due to reasons other than their collegiate education in psychology and mental health. It can be speculated that variables such as past experience, post-collegiate education, vicarious experience, etc. have a higher influence, as compared with collegiate education, on perceived confidence and performance of athletic trainers, based on the results of this study

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**Appendix A: Certified Athletic Trainers Mental Health Education Questionnaire  
Demographics**

1. What gender do you identify with?
  - a. Male
  - b. Female
  - c. Non-binary/Other
  - d. Prefer not to respond
2. As of today, what is your age in years?
  - a. Sliding scale from 18-90
3. As of today, how long have you been working as a certified athletic trainer in years?
  - a. Sliding scale from 1-75
4. Which setting do you currently work in as your **primary** setting (50% or greater of your total work hours)?
  - a. Middle School
  - b. Secondary School/High School
  - c. Collegiate/University
  - d. Professional Athletics
  - e. Clinic/Hospital/Outreach
  - f. Other
5. Which setting do you currently work in as your **secondary** setting (less than 50% of your total work hours)?
  - a. Middle School
  - b. Secondary School/High School
  - c. Collegiate/University
  - d. Professional Athletics
  - e. Clinic/Hospital/Outreach
  - f. Other
  - g. I do not work in a secondary setting
6. As of today, what is the highest level of degree you have earned?
  - a. Bachelor's Degree
  - b. Master's Degree
  - c. Doctoral Degree
7. Which of the following is your current NATA district number?
  - a. Eastern (District 1)
  - b. Eastern (District 2)
  - c. Mid-Atlantic (District 3)
  - d. Great Lakes (District 4)
  - e. Mid America (District 5)
  - f. Southwest (District 6)
  - g. Rocky Mountain (District 7)

- h. Far West (District 8)
- i. Southeast (District 9)
- j. Northwest (District 10)

### **Clinical Experience**

Instructions: Answer each question on a scale of 0-10 (never: 0, rarely: 3, sometimes: 5, often: 8, very often: 10). If you are unfamiliar with any of the mental health concerns listed below, please select the “Not Familiar” option.

1. How often do you encounter these mental health concerns with your athletes?
  - a. Depression
  - b. Anxiety Disorder
  - c. Psychosis
  - d. Mania
  - e. Disordered eating (i.e., anorexia, bulimia, orthorexia, etc.)
  - f. Body Dysmorphia
  - g. Suicidal Ideation
  - h. Self-Harm
  - i. Bipolar Disorder
  - j. Obsessive Compulsive Disorder
  - k. Attention Deficit Disorder (ADD/ADHD)
  - l. Schizophrenia
  - m. Borderline Personality Disorder
  - n. Dissociative Identity Disorder (Multiple-Personalities)
  - o. Addictions (i.e., drugs, alcohol, exercise, etc.)
  
2. Do you currently use any mental health screening tools in your job setting?
  - a. Yes
    - i. Please list the name(s) or type(s) of screening tools used
  - b. No

## Education Received

Instructions: This section will ask about psychology and mental health education. **Collegiate** education includes courses taken at a college or university in which you received credit. **Post-Collegiate** education includes CEU opportunities, seminars, lectures, conferences, etc. completed post-BOC certification.

1. Which best describes the Athletic Training Education Program (ATEP) you graduated from?
  - a. Entry-level Bachelor's Program
  - b. Entry-level Master's Program
  
2. What **collegiate** psychology courses (at a college or university in which you received credit) have you taken? (Select all that apply)
  - a. Introduction to Psychology
  - b. Group Dynamics
  - c. Sports Psychology
  - d. Introduction to Counseling
  - e. Group Facilitation
  - f. Abnormal Psychology
  - g. Adolescent Psychology
  - h. Developmental Psychology
  - i. Multicultural Psychology
  - j. Other (name:\_\_\_\_)
  - k. I have not taken a formal psychology course
  
3. If you have taken a **collegiate** psychology course(s), please enter the amount of credit hours you earned from successfully completing the course(s). You may put 0 if you have not taken any.  
*\*You may approximate the number of credit hours if you are unsure of the exact number.*
  - a. Fill in the blank
  
4. What types of **post-collegiate** psychology or mental health education (i.e., CEU opportunities, seminars, lectures, conferences, etc.) have you taken part in? (Select all that apply)
  - a. CEU courses
  - b. Conference session (NATA or state/district conference)
  - c. Organized lecture outside of your workplace
  - d. Workplace seminar/educational session
  - e. I have not done any informal psychology education
  
5. If you have taken a **post-collegiate** psychology or mental health course(s), please enter the amount completed (number of CEUs, conference sessions, lectures, etc.) You may put 0 if you have not taken any.  
*\*You may approximate the number of hours if you are unsure of the exact number.*
  - a. Fill in the blank

6. How well did your ATEP prepare you for each skill listed?

*\*Note: This is based SOLELY on how well your program prepared you, not experience you have gained working clinically post-graduation.*

Answer question on a scale of 0-10 (no preparation: 0, minimally prepared: 3, moderately prepared: 5, well prepared: 8, very well prepared: 10)

- a. Identify athletes with mental health conditions
- b. Refer athletes with mental health conditions to an appropriate, qualified provider
- c. Give support to athletes with mental health concerns
- d. Develop specific policies and procedures for the purposes of identifying athletes with mental health problems
- e. Implement specific policies and procedures for the purposes of identifying athletes with mental health problems

### **Self-Efficacy**

Instructions: Answer question 1 on a scale of 0-10 (no confidence: 0, minimally confident: 3, moderately confident: 5, confident: 8, very confident: 10)

1. How confident are you at this moment in time to perform the following tasks?
  - a. Identify an athlete with a mental health condition
  - b. Refer an athlete with a mental health condition to an appropriate, qualified provider
  - c. Give support to athletes with mental health concerns
  - d. Develop specific policies and procedures for the purposes of identifying athletes with mental health problems
  - e. Implement specific policies and procedures for the purposes of identifying athletes with mental health problems

### **Subjective Performance**

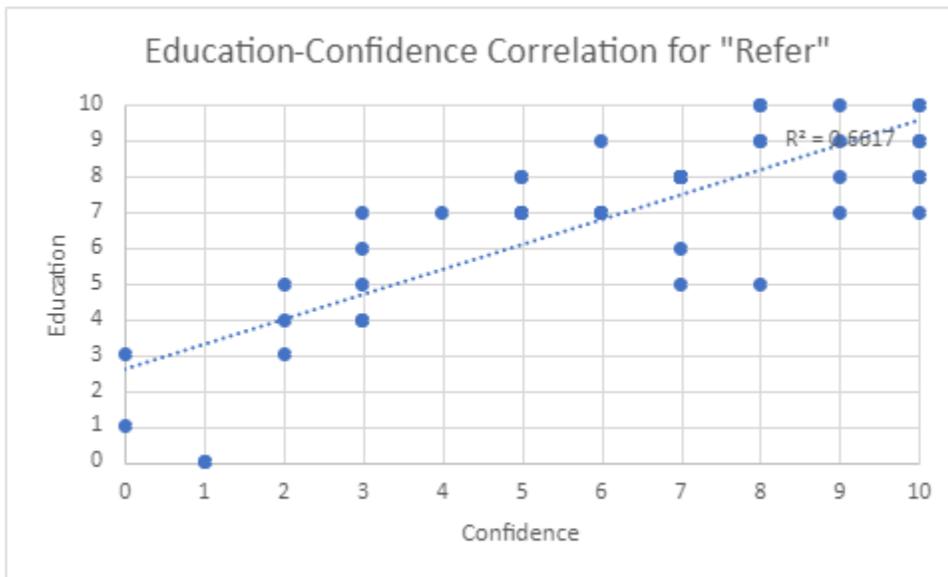
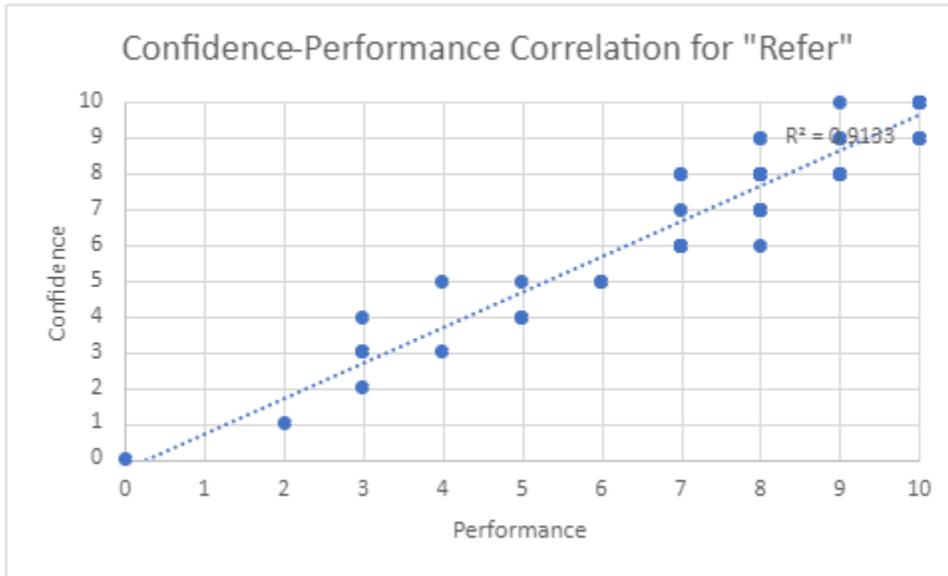
Instructions: Answer question 1 on a scale of 0-10 (unable to perform: 0, able to somewhat perform: 3, perform moderately well: 5, perform very well: 8, perform perfectly with no mistakes: 10)

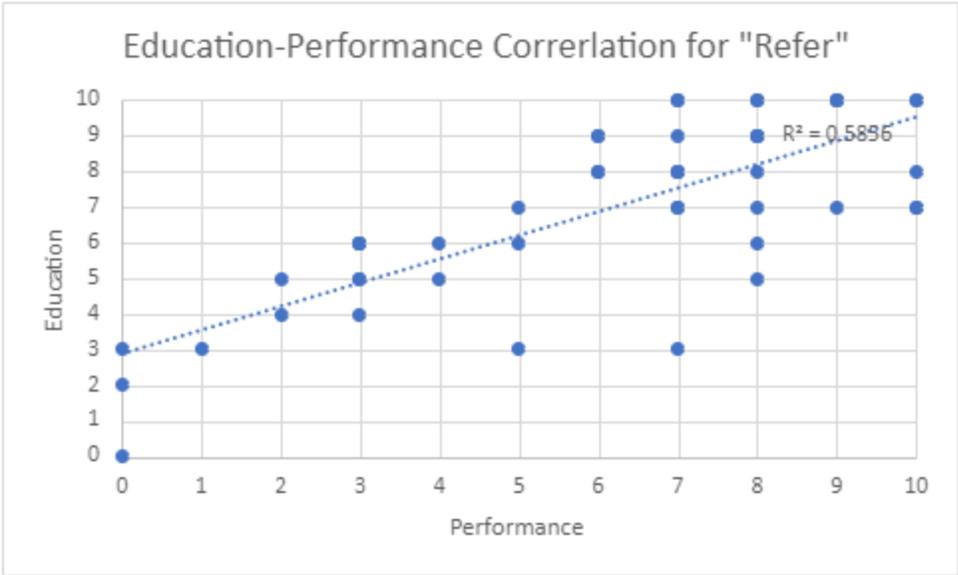
1. To what extent are you able to perform the following tasks?
  - a. Identify an athlete with a mental health condition
  - b. Refer an athlete with a mental health condition to an appropriate, qualified provider
  - c. Give better support to athletes with mental health concerns
  - d. Develop specific policies and procedures for the purposes of identifying athletes with mental health problems
  - e. Implement specific policies and procedures for the purposes of identifying athletes with mental health problems

Instructions: Answer question 2 on a scale of 0-5 (no help: 0, somewhat help: 3, definitely help: 5)

2. To what extent do you feel that more psychology education would help you as an Athletic Trainer?

**Appendix B: Scatterplots for "Refer" Correlations**





## Appendix C: IRB Letter



**EAST CAROLINA UNIVERSITY**  
**University & Medical Center Institutional Review Board**  
4N-64 Brody Medical Sciences Building · Mail Stop 682  
600 Moye Boulevard · Greenville, NC 27834  
Office 252-744-2914 · Fax 252-744-2284 ·  
[rede.ecu.edu/umcirb/](http://rede.ecu.edu/umcirb/)

### Notification of Exempt Certification

From: Social/Behavioral IRB  
To: [Christina Turner](#)  
CC: [Christine Habeeb](#)  
Date: 2/16/2021  
Re: [UMCIRB 21-000207](#)  
Athletic Trainers' Confidence and Proficiency in Addressing Athlete Mental Health

I am pleased to inform you that your research submission has been certified as exempt on 2/16/2021. This study is eligible for Exempt Certification under category # 2ab.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
Certified Athletic Trainers Mental Health Education Questionnaire(0.01)	Surveys and Questionnaires
Consent Form(0.01)	Consent Forms
Email Campaign(0.01)	Recruitment Documents/Scripts
Turner, Christina Thesis(0.01)	Study Protocol or Grant Application

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

