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How Athletic Trainers Use Goal Setting With Injured Athletes

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HOW ATHLETIC TRAINERS USE GOAL SETTING WITH INJURED ATHLETES

by

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This thesis, submitted by Jenna Wing in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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To the world’s best pets, Daisy, Cashmere, and Spot

ABSTRACT

The purpose of the present study was to identify if current Certified Athletic Trainers (ATCs) understand the importance of consistent use of sport psychology, specifically goal setting, in the athletic training room with injured athletes. Participants (n = 77) were current ATCs who have been certified by the Board of Certification (BOC), who had proper licensure in their designated districts, and were members of the National Athletic Trainers Association (NATA). A questionnaire was created to assess the frequency with which they used goal setting, how important and effective they feel goal setting is, and how prepared they feel to use goal setting. In addition, there were questions to determine how knowledgeable participants were on goal setting, barriers they feel stop them from using goal setting with injured athletes on a regular basis, and future education interests to more effectively use goal setting in everyday practice. As hypothesized, the results showed that despite being knowledgeable about goal setting and understanding the importance of goal setting, ATCs did not feel adequately prepared to use it on a daily basis. ATC's set physical health goals more regularly than they did mental health goals. Results showed that lack of time was a major barrier associated with using goal setting on a regular basis. ATCs were interested in possible future education opportunities and feel like they would be able to provide better services to their athletes with more education.

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In today's society, although things are improving, many individuals do not feel comfortable with discussing the topic of mental health. Mental health is a term used to refer to emotional, psychological and social well-being (Zimmerman, 2015). It involves psychological distress which covers feelings such as vulnerability, sadness, and fear. Fear can lead to further feelings such as depression, anxiety, excessive worrying, negative thoughts, and social isolation.

The age at which most mental health disorders occur and symptoms begin to appear is between the ages of 15-24 years old (Wang, Lang, & Olfson, 2005). In University settings, many student athletes, estimated to be between 10-15% (Watson, 2005), suffer from psychological and physical distresses that require clinical attention (Etzel, 1989 as cited in Watson, 2005). The National Collegiate Athletic Association (NCAA) reported that there are over 460,000 students-athletes who participate in 24 sports every year in the United States ("Student Athletes", n.d). Results from a systematic review showed that male and female NCAA athletes reported depression (males = 21%; females = 28%) or anxiety symptoms (males = 31%; females = 48%) (Brown, Hailine, Kroshus, & Wilfert, 2014). These statistics are staggering and show that there are many college aged student athletes' not receiving the mental health training and consultation necessary to decrease or eliminate the depressed and anxiety symptoms they feel. Not receiving the necessary mental health coping skills and training has shown to be associated with an increased risk of these student-athletes developing eating disorders (Bratland-Sanda & Sundgot-Borgen, 2013; McLester, Hardin, & Hoppe, 2014), substance abuse (Angst, 1996; Barry, Howell, Riplinger, & Piazza-Garder, 2015; Weitzman, 2004), gambling addictions (Huang, Jacobs, & Derevensky, 2010), sleep disturbance, mood disorders, and suicide (Brown et al., 2014). Internalizing and not discussing the feelings of depression and anxiety leads to further low self-

esteem and contributes to unnecessary suffering (Hartman, Michel, Winter, Young, Flett, & Goldberg, 2013; Vogel, Wade, & Heckler, 2007).

Athletes' often treat psychological distressed feelings and symptoms similar to the ways in which physical distress is dealt with, a "shake it off" or the "no pain no gain" mentality (Watson, 2005) because of the fear of being stigmatized by society. Stigma tolerance is the belief that athletes will be viewed negatively if they engage the help of a sport psychology consultation (Martin, Kellmann, Lavalle, & Page, 2002). Unfortunately, athletes who consult with sport psychologists are sometimes viewed negatively by others based on a set of behavioral expectations from their fellow athletes that they are expected to follow (Van Raalte, Brewer, Brewer, & Linder, 1992). The athlete then does not seek professional assistance and instead relies on their own internal services, such as simply pretending like nothing is wrong (Pinkerton, Hinz, & Barrow, 1989). For many cultures, the topic of mental health is not one that is easily discussed or is simply "swept under the rug" and never spoken of. Some individuals feel embarrassed or ashamed about the feelings they are experiencing or confused and uninformed about the treatments available to them and the positive results that can be obtained from the proper consultation. These issues can be treated in a variety of ways, but for the purpose of the present study, the focus will be on the use of sport psychology.

Many researchers have shown that student athletes' perceptions and attitudes about sport psychology, as a field, influence if the athlete seeks sport psychology consultation (Barney, Griffiths, Jorm, & Christensen, 2006; Corrigan & Kleinlein, 2005; Lopez & Levy, 2010; Martin, Wrisberg, Beitel, & Loundsbury, 1997; Watson, 2005). The attitudes of the people around these student athletes' the most (i.e., coaches, teammates, friends, athletic trainers, family, etc.) influence this help seeking behavior (Martin, Akers, Jackson, Wrisberg, Nelson, Leslie, &

Leidig, 2001). Gender, ethnicity, and culture of the individual also play a major role in their help seeking behavior (Martin, 2005). Most of the recent research on help seeking behavior in student athletes has examined gender and type of sport. Martin et al. (1997) showed that male athletes' have a greater internal stigma towards sport psychology consulting compared to the female athletes' attitudes towards sport psychology consulting. They also found that African American athletes have a greater stigma toward sport psychology consulting compared to Caucasian athletes. Confidence in the sport psychology consultant is the belief that sport psychology is helpful and will positively benefit the athletes who participate (Martin et al., 2002). In another study, conducted a couple years later, Martin, Lavallee, Kellmann, and Page (2004) examined attitudes toward sport psychology consulting using adult athletes from the United States, United Kingdom, and Germany. They discovered that overall males stigmatized sport psychology consulting more than female athletes did. Females appeared to be more willing to seek assistance where males were not. When comparing the countries, they found that the athletes from the United States were more likely to have a stigma compared to the United Kingdom and German athletes, and that the athletes from the United Kingdom were overall more confident in the abilities of sport psychologists as a whole (Martin et al., 2004). For type of sport, contact and non-contact, the United States contact sport athletes had a more negative view compared to the contact athletes from the other countries (Martin et al., 2004). In another study, Martin (2005) again looked at gender attitudes towards sport psychology, but this time between high school and college aged athletes. He found that male high school and college aged athletes stigmatized sport psychology consulting more than female high school and college aged athletes did. Overall, high school athletes had a slightly more negative attitude toward sport psychology consulting than did college aged athletes, and participants who were involved in physical contact sports had a more

negative view of sport psychology consulting than those who participated in non-physical contact sports.

Another area of research related to help seeking behavior was conducted by Lopez and colleagues (2010). They researched student athletes' perceived barriers to and preferences for seeking counseling. Lack of time to seek services was the chief barrier to not seeking out treatment. This finding is understandable given that student-athletes have to balance everything required for school and the requirements for their particular sport. The athletes' surveyed stated that they avoided seeking counseling due to the social stigma placed on those who do seek out assistance elaborating that other student athletes consider those seeking sport psychology consultation mentally unhealthy or weak noting that some individuals have a hard time believing psychological distress is a problem because it is an injury that is not visible to the naked eye. These results show that student athletes are greatly concerned with the perceptions of others that is reasonable considering they are in the limelight and are watched and criticized almost all the time. The last barrier they discovered was that the athletes' felt they were not being understood by others (i.e., not understanding all the responsibility and pressure of being a student athlete).

Additional research on mental illness stigma and help-seeking behavior was conducted by DeLenardo et al. (2014) who looked at opinions and attitudes of male varsity football players from universities in Ontario, Canada. Four main themes emerged: perceived public stigma, personal stigma, social function of stigma, and masculinity and toughness. Athletes reported that the perceived public stigma of mental illness is a result of weak character. This characteristic is simply not true and could be formed based on lack of education, lack of visible symptoms, or social expectations. Males internalized emotions at a higher rate than females did, and mental illness was seen as a "crutch" or an excuse from their teammates. Personal stigma, in this

instance, was when the individual struggling was seen by teammates as being weak and/or that they were a threat to the group as a whole. Peer rejection was directed from those teammates who did not completely understand what that individual was going through and why they were using sport psychology consulting. Social function was when teammates will get involved if the "ill" person is reliable, trustworthy, had good work ethic and their individual willingness to compete. The authors suggested that those individuals who were struggling with mental illness but who still aligned themselves and their values with those of the team were considered to still be contributing to the overall team success and were not labeled as a "weak link." Lastly, masculinity and mental toughness which is the idea of being masculine presented in the size, shape, and use of the male body: that is, "the bigger and stronger you are, the tougher and more masculine you appear to others" (p. 51). This "suck it up" (p. 51) mentality teaches males to reject their physical and emotional needs and as a result develop unhealthy habits and behaviors that can lead to further health problems down the line. The athletes in the study discussed the "macho act" (p. 52) a tactic to mask weakness, or taking more than the recommended amount of painkillers in order to play and even going as far as not disclosing concussion symptoms from their athletic trainers to ensure play time (DeLenardo & Terrion, 2014).

The challenges that student athletes endure is at times extremely overwhelming. The pressures to be perfect, successful, and the best of the best intermittently drives these student athletes to different depths of great mental despair (Angst, 1996; Barry et al., 2015; Bratland-Sanda & Sundgot-Borgen, 2013; Brown et al., 2014; Etzel, 1989 as cited in Watson, 2005; Huang et al, 2010; McLester et al, 2014; Weitzman, 2004). In order to give them the highest quality of support, all parties need to work to reduce the stigma of mental health conditions, so these student athletes feel comfortable to seek help (Marin, Kellman, Lavalle, & Page, 2002;

Martin et al., 1997 as Cited in Anderson, Hodge, Lavalle, & Martin, 2005). Proper education about the benefits and availability of individuals with sport psychology training needs to be a continuous and unified front in order to help student athletes conquer and find success with their mental health. Student-athletes are at risk for psychological distress, and that has many implications for their well-being (Hartman et al., 2013; Vogel at al., 2007). The situation is complicated because they do not reach out for help as needed due to a stigma associated with mental health services (Barney et al., 2006; Corrigan & Kleinlein, 2005; Lopez & Levy, 2010; Martin et al., 2001; Martin et al., 1997; Pinkerton at al., 1989; Watson, 2005). A more concerted effort needs to be made by the individuals that are around these athletes the most, specifically athletic trainers (Moulton, Molstad, & Tourner, 1997; Tracey, 2008).

Athletic Trainers (ATC's) might be able to develop levels of trust that will encourage athletes to talk about the experiences or struggles that they might be facing or have faced in the past (Moulton et al., 1997; Tracy, 2008). When most people think about an ATC, they think about the person who tapes the athlete's ankle, for example, before the big game. The National Athletic Training Association (NATA) defines an ATCs as " highly qualified, multi-skilled health care professionals who collaborate with physicians to provide preventative services, emergency care, clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions" (NATA.org). ATC's work in a variety of settings including primary and secondary schools, professional athletics, youth athletic leagues, physician practices, hospitals, clinics, commercial job settings, police and fire departments, and performing art centers to name a few (NATA.org). ATC's, however, are mostly commonly known for working with athletes' in a sport related setting, which in return allows them to hold a unique position as a primary influencer with athletes because they are with them all the time. For example, ATC's are around

the team before practice for pregame/practice, any treatment and rehabilitation, during practice, post practice treatment and rehabilitation, on road trips, etc.

In order to become an ATC, candidates are required to pass a national board certification from the NATA and Board of Certification (BOC) which require a list of Athletic Training Education Competencies to be completed before graduation. The most recent edition that is currently used is the fifth edition, that came out in 2011, which intends to "provide educational program personnel and others with the knowledge, skills, and clinical abilities to be mastered by students enrolled in professional athletic training education programs. Mastery in these competencies provides the entry–level athletic trainer with the capacity to provide athletic training services to clients and patients of varying ages, lifestyles, and needs," (NATA, p.3). One topic that is touched on but not heavily weighted, is Psychology, specifically Sport Psychology. The NATA educational competencies state that:

"athletic trainers must be able to recognize clients/patients exhibiting abnormal social, emotional, and mental behaviors. Coupled with recognition is the ability to intervene and refer these individuals as necessary (p. 27). ATCs should be able to select and integrate appropriate psychosocial techniques into a patient's treatment or rehabilitation program to enhance rehabilitation adherence, return to play, and overall outcomes. This includes, but is not limited to, verbal motivation, goal setting, imagery, pain management, self-talk, and/or relaxation" (p. 33) (NATA.org).

The above competencies would allow ATC's to have a basic understanding of the importance and skills associated with Sport Psychology and how those skills could and should be incorporated into the athletic training room. Specifically, in rehabilitation of the athlete after a serious injury because when assisting in rehabbing athletes to the place they were at before

injury or better includes addressing the physical and psychological aspect that injury has on that individual person (Arvinen-Barrow, Penny, & Hemmings 2010; Larson, Starkey & Zaochkowsky, 1996; Mckenna, Delaney, & Phillips 2002; Tracey, 2008).

Researchers have shown that ATC's, for the most part, understand the importance of using sport psychology techniques like goal setting, but unfortunately do not feel adequately prepared to use it effectively (See Appendix A) (Clement, Arvinen-Barrow, 2013; Clement, Granquist & Arvinen-Barrow, 2013; Gordon, 2002; Hamson-Utley, Martin, & Walters, 2008; Kamphoff, Hamson-Utley, Antoine, Thomae & Hoenig, 2010; Moulton et al., 1997; Stiller-Ostrowski, Hamson-Utley, 2010; Stiller-Ostrowski & Ostrowski 2009; Zakrajsek, Fisher & Martin, 2017). In one study, conducted by Clement et al in 2013, out of 215 ATCs surveyed, 160 of them believed that athletes were psychologically affected as a result of their injuries and they expressed an interest about increasing their current knowledge and understanding of psychosocial strategies in order to provide the best possible care. The ATC's expressed that understanding the relationship between athletes' emotional and behavioral responses was important. They also reported not using or having a written procedure as a guideline for making referrals when necessary for psychologically distressed individuals. The authors of the study concluded that it may be that ATCs are using psychosocial strategies they are more confident in using instead of those that are most effective and appropriate (Clement et al., 2013).

When the role of Sport Medicine Professionals (SMP: e.g., ATCs, physiotherapists) in addressing psychosocial aspects of sport-injury rehabilitation was studied according to the view of a group of professional athletes', the athletes stated that they expected to be injured and considered it part of the job of being an athlete (Arvinen-Barrow, Massey, & Hemmings, 2014). They also noted the emotional effect of being injured on their lives- frequent feelings of self-

doubt, worry, and frustration on the topic of their career and if they were going to be able to play again. The athletes stated that they expected SMPs to give them tools necessary to move forward in the process of rehabilitation to get back to activity. The athletes stated that they did not recall their SMPs using any psychosocial strategies during their rehab, but the psychosocial support the athletes received was subtle in the form of goal setting. Unfortunately, the goal setting was set by the SMP instead of it being a joint task between the SMP and the athlete. The authors stated that, like the previous study in 2013, addressing both physical and psychosocial aspects of injuries during rehab is an important and necessary aspect. The most effective SMP are the ones that are able to use subtle interventions to assist athletes in rehabilitation without making them feel like they were receiving psychosocial services (Arvinen-Barrow et al., 2014).

From reading previous research it can be determined that ATC's hold a prime influencer position with athletes' due to the amount of time they spend together. According to the NATA (2011) ATC's are expected to incorporate basic and advanced psychological strategies into rehabilitation programs. Some examples of these strategies include relaxation techniques, imagery, self-talk, refuting negative thoughts, and goal setting.

Goal setting was chosen for the present study because it is one of the most commonly used Sport Psychology skills. ATC's have multiple uses for goal setting. Goals can be used in both physical and mental aspects of sport. For physical goals, some examples would be setting daily practice goals, goals in the weight room, and goals in the rehabilitation setting. Some examples of mental goals are continuing to have a positive attitude during injury rehabilitation although being frustrated or showing up to a rehabilitation session although not wanting to go.

When going through the process of receiving a degree in athletic training some of the course work includes lectures and readings about the importance of Sport Psychology, but

experience with applying the techniques is rare. A section of one of the most commonly used textbooks "Principles of Athletic Training" (Prentice, 2017) discusses the importance of goal setting and that it has been shown to be an effective motivator for compliance to the rehabilitation of an athletic injury as well as for reaching goals in a general sport setting. The textbook includes many of the principles of goal setting such as: goals should not be achieved with one burst of effort but should be an outcome of meeting many small short-term goals before reaching the last and final goal; goals should be challenging but attainable with a reasonable amount of effort; goals that are easily reachable have no personal reward; goals must be personal and internally satisfying for that specific individual athlete, not goals that are pushed onto the athlete from the ATC; goals need to incorporate positive reinforcement when met, managing time in order to make goals a part of everyday life, feeling of social support from coaches and teammates, and feelings of self-efficacy when goals are met (Prentice, 2017).

Many researchers in the past have looked at ATC's and goal setting. Arvinen-Barrow, Hemmings, Weigland, Becker, & Booth (2007) studied the views of chartered physiotherapists on the psychological content of their practice. They found that athletes who cope less successfully with injury have unrealistic goals and expectations (13.85%). The physiotherapists indicated that further training in goal setting would be useful (4.34% +/- 1.00) on a 5-point Likert (1 = *not important*, 5 = *very important*). The conclusion of this study was that physiotherapists reported using techniques but expressed need for further training specifically at the post graduate level. In a second study, Arvinen-Barrow et al. (2010) looked at UK chartered physiotherapists' personal experiences in using psychological interventions with injured athletes. Qualitative results showed four themes: acquired knowledge where physiotherapists stated they had limited formal training; understanding intervention techniques where they stated setting goals is vital;

experiences on using intervention techniques; and the therapists' role in process. Again, the physiotherapists' recommended that further training on a range of psychological techniques would be useful.

In 2013, Clement et al. studied the psychosocial aspects of athletic injuries as perceived by athletic trainers. They researched 13 psychosocial strategies currently used with injured athletes and their results showed that goal setting was used almost 100% of the time. The ATC's indicated that they would like to learn more about setting realistic goals. They rated this 4.22 out of 5 on a 5-point Likert scale (1 = *not important*, 5 = *very important*). The conclusion of this study showed the current use of skills, but also that there is a need and want to learn more effective and different ways to incorporate the skills previously discussed.

Cormier and Zizzi (2015) researched athletic trainers' skills in identifying and managing athletes experiencing psychological distress. When surveyed, 91.2% of the ATC's stated that they felt it was their responsibility in recognizing psychological responses (anger, depression, fear, frustration, etc..), and 43% felt it was their responsibility to implement psychological interventions, while only 36% felt it was their responsibility to provide counseling for athletes. On a scale 1 (*not at all competent*) to 4 (*very competent*), ATC's rated themselves, on average, competent in goal setting on ATC's perceived competencies (3.73 +/-0.56). Through doing this research, the authors concluded that previous courses in sport psychology allowed individuals the ability to identify symptoms more accurately than individuals who have not taken a sport psychology class. The ATC's studied had a high accuracy in identifying symptoms and making referral decisions but struggled in selecting appropriate intervention strategies.

Hamson-Utley et al. (2008) looked at athletic trainers' and physical therapists' perceptions of the effectiveness of psychological skills within sport injury rehabilitation

programs. Participants reported that the programs they went to varied in whether they included content about using goal setting with athletes; there was a 50/50 chance when going through an undergraduate program that they got some form of training in sport psychology. When asked whether they agree setting appropriate rehabilitation goals will help improve adherence, the ATC's mean score (of agreeing) was 6.46 out of 7 (1 = *strongly disagree*, 7 = *strongly agree*). These results show that ATC's understand the importance of using goal setting with athletes.

Stiller-Ostrowski and Hamson-Utley (2010) researched athletic trainers' educational satisfaction and technique use within the psychosocial intervention and referral content area. The majority of ATCs, 59.9%-74.6%, recalled being educated on these topics during AT education programs, but they were less satisfied and confident in outlining a progression of short-term goals for athletes. Based on their results, the authors concluded that current programs provide education in most Psychosocial Intervention and Referral (PIR) competencies, but ATCs have infrequent implementation of techniques in practice.

Wiese, Weiss, and Yukelson (1991) surveyed athletic trainers looking at the importance rating of characteristics distinguishing between athletes coping most versus least successful with injury. Their results were that the use of goal setting was rated 4.09 (*important*) on a 5-point Likert anchored by 5 (*very important)*. Effectiveness ratings for techniques to facilitate athlete's ability to psychologically cope with injury rehab were 4.30 (out of 5) for focusing on short term goals. Lastly, they looked at the importance rating for knowledge about strategies for ATC role in dealing with injured athletes and setting realistic goals was rated 4.53 (out of 5). These results showed the authors that knowledge about using a positive communication style, strategies for setting realistic goals, methods for encouraging positive self-thoughts and understanding individual motivation were rated most important.

The studies just discussed have all researched ATC's and their use and views of sport psychology and the remaining articles seen in Appendix A, show the importance of using sport psychology in regular practice. Setting and working on goals has many beneficial effects. For example, goals creates space for a variety of rehabilitation exercises performed, fosters the development of positive self-talk, promotes staying involved with the team although the individual might not be practicing, and encourages open and honest communication with all parties involved (Arvinen-Barrow et al., 2007; Clement et al., 2013; Larson et al., 1996). Goal setting has been proven to increase rehabilitation adherence which as a result allows for successful return to activity (Armatas, Chondrou, Yiannakos, Galazoulas, & Velkopoulos, 2007). Despite these positive benefits, ATC's are lacking the knowledge to incorporate basic psychological skills into a daily practice (e.g., Zakrajsek et al., 2017), even if they had one sport psychology course.

The purpose of the present study was to identify if current ATCs understand the importance of consistent use of sport psychology in the athletic training room with injured athletes and to determine if they feel adequately prepared to use these psychology skills. Cormier and Zizzi's (2015) research discovered that 43% of the population of ATCs studied believed it was their responsibility to implement psychological strategies during the rehabilitation process. The difference between the studies discussed above and in Appendix A is that the present study specifically looked at goal setting, for both mental and physical goals. In addition, individuals were surveyed at a larger scale. The response rate was much larger compared to previous studies. It was hypothesized that ATCs participating in the current study would have the same attitude that previous researchers found which was that ATC's understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. To extend the study,

questions were added to identify the current knowledge level ATCs have on the topic of sport psychology and their preferences for further education opportunities/delivery methods. Lastly, questions were added to the survey to understand how current ATCs can use additional information on the topic of goal setting to provide better services than they currently are providing. This information would allow current and future education programs to adjust their curriculums to improve the confidence of those soon to be ATCs.

Method

Participants

Participants were current ATCs who were certified by the BOC, who had proper licensure in their designated districts, and were all members of the NATA. There was a total of 1000 surveys distributed, and 999 were received, 1 bounced back from the delivery address. Qualtrics showed that only 81 surveys were started, and that resulted in 77 total responses. Three follow up emails were sent out weekly to all 1,000 individuals. The inclusion criteria was that all individuals must be a member of the NATA, and a Certified Athletic Trainer. All genders, and ages were invited to participate. There were 36 females and 17 males (23 individuals did not respond to that question). The average age of the participants was 32 years (*SD* = 8.47; Range = 24-53). Individuals ranged in experience as an ATC from 1 to 38 years (Mean = 8.71, *SD* = 7.34). Their work environment was described by the following: 34% of the individuals worked at a College/University setting (*n* = 18) 26.4% worked at a high school (*n* = 14), 18.9% worked at an "other" setting but did not fill in the blank space provided (*n* = 10), 15.1% worked in clinic/outreach (*n* = 8), 3.8% worked in a hospital setting (*n* = 2), and 1.9% worked in semiprofessional/professional sport setting (*n* = 1). Over half of the sample (*n* = 34; 64.2%) worked in an Urban setting, while 35.8% (*n* = 19) worked in a rural setting. Urban Area includes 50,000 or more people while Rural Area includes at least 2,500 and less than 50,000 people (this

definition was provided by the United Stated Consensus Bureau). When asked about the number of sport psychology courses completed, 37.7% (*n* = 20) took 1 class; 13.2% (*n* = 10) took three classes; 11.8% (*n* = 9) took two classes; 9.2% (*n* = 7) took zero classes; 2.6% (*n* = 2) took either six or eight classes; 1.3% (*n* = 1) took four, seven, or ten classes.

Measures

A questionnaire was created for this study (see Appendix B). The first section (listed in Table 1) assessed the frequency with which they used goal setting, how important and effective they feel goal setting is, and how prepared they feel to use goal setting. Question one was a qualitative question asking, "what type of goal setting do you most commonly use with your athlete(s)?" These questions used a 5-point Likert scale (1 = *strongly disagree, 5 = strongly agree).*

Five basic goal setting questions made up the second section to determine how knowledgeable the individuals taking part in the study were on goal setting. Each individual got a total score (out of 5) for knowledge where there was one point given for each correct answer. The individual score percentage was calculated by taking the number of correct questions divided by the total questions (5), then multiplying by 100.

Section three included questions that involved barriers (three questions) associated with the use of goal setting. The response scale was a 5-point Likert scale (1 = *strongly disagree, 5= strongly agree).* There was also a qualitative question which asked "Please list any additional barriers you feel hold you back from using goal setting on a regular basis. If none, please write none."

Section four asked individuals about possible future education opportunities (four questions). The response scale was also 5-point Likert (1 = *strongly disagree, 5= strongly*

agree). There was also a qualitative fill in the blank that asked "With more applied knowledge of goal setting what do you think you can do better than what you are doing now?"

The last section of questions collected demographic information (gender, age, NATA district, years of experience, current work setting, rural or urban setting, number of sport psychology courses completed, degree at which ATC was received) as reported in the participants section.

Procedure

Approval to conduct this study was granted by the Institutional Review Board (IRB-201910-088) for the Protection of Human Subjects. Distribution of the questionnaires was done through NATA. An email with the purpose and link to the questionnaire was sent out to a random group of 1,000 currently members of the NATA. Three follow up reminders were sent out weekly to all 1,000 individuals. Qualtrics showed that 81 surveys were started and there were 77 complete responses.

Data Analysis

All of the data was imported to SPSS for statistical analysis. For questions related to use, knowledge scores, barriers and future education opportunities, descriptive information was provided and where comparisons were made between physical and mental health categories, *t*-tests were used. For the qualitative questions, responses were sorted and categorized, and common themes were reported.

Results

Use of Goal Setting

For the question: "what type of goal setting do you commonly use with your athlete(s)?", there were 55 responses (some individuals did not answer this question). The common themes were: short term goals (n = 22, 40.0%), physical goals (n = 17, 30.9%), establish return to play

goals (*n* = 11, 20%), long term goals (*n* = 11, 20%), smart goals (*n* = 7; 12.7%), mental goals (*n* = 6, 10.9%), sport specific goals (*n* = 5, 9.1%), personal goals (*n* = 1, 1.8%).

The results from questions about ATCs current use of goal setting are in Table 1 below. Overall means for the frequency questions showed that ATCs were using goal setting, but the means for both mental health goals and physical health goals were the lowest with the question of "I currently set daily goals with my athletes." The overall means for the importance questions showed that ATC's believed that goals are important for both mental health and physical health. The overall means for the effectiveness questions showed that ATC's believe that setting goals for both mental health and physical health would help improve the athlete's adherence rate and speed up the recovery process for athletes. The overall means for the prepared questions showed that ATC's felt more prepared to set physical health goals compared to mental health goals.

Paired sample *t*-tests were done for each question comparing mental health goals and physical health goals to determine if the means were significantly significant (see Table 1). All means were significantly different from each other (except for one importance "I believe the use of goal setting is vital to the success of my athlete" and one effectiveness item: "I believe the use of goal setting is vital to the success of my athlete") and values were higher for the physical health goals compared to mental health goals. For all questions physical health goals had a higher percentage of agreement compared to mental health goals.

Table 1
Use of Goal Setting

Question	Type of Goals	Mean	SD	Range	% Agreement in some form	*p*
Frequency						

I currently use goal setting while working with all athletes (*n* = 55)	Mental Health Goals	3.44	1.17	5	52.7%	.00
	Physical Health Goals	4.45	0.86	5	89.1%	
I currently set daily goals with my athletes (*n* = 55)	Mental Health Goals	2.89	0.90	5	25.5%	.00
	Physical Health Goals	3.51	0.92	5	52.7%	
Importance						
I believe the use of goal setting is vital to the success of my athlete *(n* = 55)	Mental Health Goals	4.53	0.74	5	94.5%	.71
	Physical Health Goals	4.54	0.72	5	96.4%	
I believe that using goal setting is an important aspect when working with athletes *(n* = 55)	Mental Health Goals	4.56	0.60	5	94.5%	.02
	Physical Health Goals	4.65	0.55	5	96.4%	
Effectiveness						
I believe that setting frequent appropriate rehabilitation goals will help improve the athlete's adherence rate. *(n* = 55)	Mental Health Goals	4.38	0.68	5	89.1%	.01
	Physical Health Goals	4.56	0.61	5	92.7%	
I believe that setting appropriate goals will help	Mental Health Goals	4.29	0.74	5	87.3%	.40

speed up the recovery process for athletes (*n* = 55)	Physical Health Goals	4.22	0.81	5	89.1%	
Preparedness						
I believe that the education I received prepared me to use goalsetting effectively with my athletes (*n* = 55)	Mental Health Goals	3.44	1.17	5	52.7%	.00
	Physical Health Goals	4.45	0.86	5	89.1%	

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Goal setting knowledge

As shown Table 2, the average score for the knowledge test was 4 out of 5 (80%). The toughest question was: When setting goals it should be a joint effort between the athlete, ATC, coach, and administration (True or False). Individual overall scores can be found in Appendix C.

Table 2
Knowledge Quiz

Question	Correct Answer	% Correctly Answered
True or false. When setting goals the main purpose should be to identify clear objectives for the rehabilitation process to enable athletes to return back to full fitness both mentally and physically. (*n* = 53)	True	96.2%
True or false. Outcome, performance, and process goals are the three types of goals when working with athletes. (*n* = 53)	True	75.5%
True or false. When setting goals it should be a joint effort between the athlete, ATC, coach, and administration. (*n* = 53)	False	48.1%
True or false. Long term goals provide direction; while short term goals serve as small	True	98.1%

intermediate steps that lead to the long-term objectives. (*n* = 53)		
S.M.A.R.T goals stand for what? (*n* = 53)	Specific, Measurable, Attainable, Realistic, Timely	98.1%

*Answer: 1 = *True*; 2 = *False*

Barriers of Use

For the qualitative question: "what barrier they felt held them back from being able to use goal setting on a regular basis," there was a total of 41 responses (some individuals did not answer this question). The common themes were: compliance/buy in (*n* = 13, 31.7%); ATC to athlete ratio (*n* = 5, 12.2%); relatability to athlete (*n* = 3, 7.3%); accessibility (*n* = 2, 4.9%); "I don't feel qualified to address mental health as an ATC" (*n* = 1, 2. 4%); 17 participants wrote in "none" (41.5%).

Descriptive results (see Table 3), showed that ATC's felt that lack of time was a bigger barrier compared to lack of knowledge and lack of experience. Overall means were at or below the midpoint of the scale indicating that these were not major barriers.

Table 3
Barriers of Use

Question	Mean	Standard Deviation	Range	% Agreement in some form
I feel that lack of time is a barrier that holds me back from using goal setting on a regular basis. (*n* = 53)	3.74	1.11	5.0	71.7%
I feel that lack of knowledge is a barrier that holds me back from using goal setting on a regular basis. (*n* = 53)	2.62	1.11	5.0	22.6%
I feel that lack of experience with the use of goal setting is a	2.72	1.22	5.0	37.7%

barrier that holds me back from using it on a regular basis. (*n* = 53)				

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Future Education Interests

For the question: "with more applied knowledge of goal setting what do you think you can do better than what you are doing now?" there was a total of 47 responses (some individuals did not answer this question). The common themes were: increase positive outcomes (*n* = 18, 38.3%); increase frequency of goal setting use (*n* = 15; 31.9%); increase education for all individuals involved (*n* = 9; 19.1%); increase compliance (*n* = 6, 12.8%); yes more education would help improve the care currently given (*n* = 6, 12.8%); nothing would change (*n* = 4; 8.5%); better mental wellbeing throughout return to activity process (*n* = 3, 6.4%).

Descriptive results (see Table 4) show that overall ATC's were very interested in future education interests. They were equally as interested in learning how to use goal setting more effectively in their everyday practice as they were in learning how to use goal setting more regularly in their everyday practice. They saw the value in learning how to become more proficient in both goal setting knowledge and effectively implementing goal setting.

Table 4
Future Education Interests

Question	Mean	Standard Deviation	Range	% Agreement in some form
I would be interested in learning how to use goal setting more effectively in my everyday practice. (*n* = 53)	4.06	0.95	5.0	79.2%
I would be interested in learning how to use goal setting more	4.06	0.95	5.0	79.2%

regularly in my everyday practice. (*n* = 53)				
Select all that apply				
If a continuing education opportunity was available my preferred method of delivery for this continuing education would be ___? (*n* = 53)	CEUs- 32 (60.4%) Classes online- 30 (56.6%) Classes in person- 11 (20.8%) Handouts- 7 (13.2%)			
Who do you feel is responsible to provide this continuing education? Pick all that apply. (*n* = 53)	NATA- 38 (71.7%) Individual Responsibility- 37 (69.8%) BOC- 25 (47.2%) Employer- 20 (37.75) Educational Institution- 1 (1.9%) State Association- 1 (1.9%)			

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Discussion

The purpose of this study was to identify if current ATCs understand the importance of consistent use of sport psychology in the athletic training room with injured athletes and to determine if they feel adequately prepared to use these psychology skills. The results showed that current ATCs understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. It was hypothesized that ATCs participating in the current study would have the same attitude that previous researchers found which was that ATC's understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. Our hypothesis supports past studies (e.g., Clement, Arvinen-Barrow, 2013; Clement et al., 2013; Gordon, 2002; Hamson-Utley et al., 2008; Kamphoff et al., 2010; Moulton et al., 1997; Stiller-Ostrowski, Hamson-Utley, 2010; Stiller-Ostrowski & Ostrowski 2009; Zakrajsek et al., 2017). From the results, the hypothesis can be determined to be true.

From the results on the use of goal setting, ATCs understand that goals are important for both mental health and physical health. This result is supportive of Arvinen-Barrow et al. (2014).

ATC's believed that setting goals is beneficial for both mental health and physical health. They also believed that increasing the frequency of use would help improve athlete's adherence rate and speed up the return to activity process for athletes. ATC's, overall, felt more prepared to set physical health goals compared to mental health goals which could be the reason that they are using goals but doing so more often with physical health compared to mental health. The differentiation between mental and physical health extends research in this area showing that there is a comfort with physical health goals, but not mental health goals. These results are consistent with results from Clement et al. (2013). They showed that ATCs were using psychosocial strategies they were more confident in using instead of those that may be most effective and appropriate. We know that mental health is extremely important especially for student athletes so education in this area might be beneficial for ATCs. From past research done by Arvinen-Barrow et al. (2014) and the current study, we can conclude that addressing both physical and psychosocial aspects of injuries during rehab is an important and necessary aspect (Arvinen-Barrow et al., 2014). Hamson-Utley et al. (2008) results also showed that ATCs understand that setting appropriate rehabilitation goals will help improve adherence.

Regarding goal setting knowledge, the results showed that the ATC's were knowledgeable on the topic of goal setting. This result is supportive of the competencies put forth by the NATA that "ATCs should be able to select and integrate appropriate psychosocial techniques into a patient's treatment or rehabilitation program to enhance rehabilitation adherence, return to play, and overall outcomes. This includes, but is not limited to, verbal motivation, goal setting, imagery, pain management, self-talk, and/or relaxation" (p. 33) (NATA.org). The question that was the most challenging asked which individuals should be involved in the goal setting effort. We know that ATC's have proper knowledge with goal setting

but are missing a piece of the puzzle that allows them to properly use it. Cormier and Zizzi (2015) research supports our findings in the fact that the ATC's they studied had a high accuracy in identifying symptoms and making referral decisions but struggled in selecting appropriate intervention strategies. This disconnect between knowledge and use was also evident in a study conducted by Arvinen-Barrow et al. (2014). The athletes in that study stated that they expected SMPs to give them tools necessary to move forward in the process of rehabilitation to get back to activity. The athletes stated that they did not recall their SMPs using any psychosocial strategies during their rehab, but the psychosocial support the athletes received was subtle in the form of goal setting. However, there was not a joint effort between both the ATC and the athlete to set these goals. The goal setting was set by the SMP instead of it being a joint task between the SMP and the athlete (Arvinen-Barrow et al., 2014).

Also related to the knowledge results is the finding that ACTs who do not set goals are not setting them because they have a lack of knowledge on the topic of goal setting, but rather lack of time was a bigger barrier. This situation is extremely common especially in the high school setting where sometimes there is only one ATC employed for the entire school. There were only ten ATCs who indicated that they strongly disagree/somewhat disagree that lack of time was a barrier that holds them back from using goal setting on a regular basis showing that most ATCs thought time was a barrier. For the other barriers, 27 ATCs strongly disagree/somewhat disagreed to the statement of "I feel that lack of knowledge is a barrier that holds me back from using goal setting on a regular basis." This result shows that a majority of the ATC's feel that time is a barrier. Twenty-five ATCs strongly disagree/somewhat disagree to the statement of: "I feel that lack of experience with the use of goal setting is a barrier that holds me back from using it on a regular basis." One individual stated "I don't feel qualified to address

mental health as an ATC." This statement proves that in addition to time there are additional barriers to why ATCs do not use goal setting on a regular basis with their athletes.

Regarding future education interests, ATC's revealed that they were very interested in learning more about goal setting. This finding supports other studies findings such as Arvinen-Barrow et al. (2007), Arvinen-Barrow et al. (2010), and Clement et al (2013). More specifically, ATC's were equally as interested in learning how to use goal setting more effectively in their everyday practice as well as learning how to use goal setting more regularly in their everyday practice. ATC's see the value in learning how to become more knowledgeable about goal setting knowledge and proficient in effectively implementing goal setting.

Although we sent surveys to 1,000 individuals our overall return rate was very low. To get a higher return rate future researchers should look into what time of the year do ATCs have more down time. More down time for ATCs could equal a higher return rate. Future researchers should look at how to improve the academic curriculum requirements to receive a degree in Athletic Training to include more academic requirements on the topic of sport psychology as a whole. How specifically does increasing the use of goal setting with athletes improve things such as adherence, return to play, confidence, etc. Digging deeper into the idea of if ATCs really do understand the importance of goal setting then why are they continuing to not using it. Knowledge does not equal behavior change. It would be beneficial for future research to study that disconnect and find what we can do to bridge that gap. Are there additional barriers that are present that we did not touch on or ask about? Are there additional avenues that ATCs would like to receive more information? Such as an informational app or something along those lines. A qualitative study into why there is a disconnect with having the knowledge on goal setting but why the knowledge is not being put into action would be beneficial to Athletic Training as a field

and to the athletes these ATCs are treating. Additional research should look at other ways that sport psychology skills could be incorporated into the athletic training room. Skills such as but not limited to imagery and self talk.

In conclusion, the results of this study verified that ATC's do understand the importance of goal setting for both physical and mental health, and they are knowledgeable about it. ATCs were more comfortable using goal setting when using it for physical health goals compared to mental health goals. ATC's know that using goal setting can positively influence their athlete both physically and mentally. Time was considered the biggest barrier as to why goal setting was not used on a regular basis. Lastly, current ATC's are interested in and would like to receive more education to learn how to more effectively use and implement goal setting for physical and mental health on a regular basis. ATC's hold a prime influencer position with the athletes that they work with. Providing ATC's the opportunity to gain more knowledge on the topic of sport psychology will not only improve the care for the mental side of athletics, but in return will also improve the care of the physical side of athletics. Athletes know that injury is part of being an athlete, but if we are able to mentally prepare these athletes for what lies ahead, in return they will also be physically prepared.

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Appendix A

Athletic Trainer Literature Review

Author	Title	Purpose	Skills Covered	Type of Study	Findings
Arvinen-Barrow.M., Hemmings,B., Weigland.D., Becker.C., Booth.L. (2007)	Views of chartered physiotherapists on the psychological content of their practice: A follow-up survey in the UK	To assess, on a national level, the views of chartered physiotherapists with regard to the psychological content of physiotherapy practice	~99.7% believed all athletes to some extent are psychologically affected by their injuries ~Characteristics of athletes who cope less successfully with injury is unrealistic goals and expectation (13.85%) ~Further training in goal setting would be useful (4.34% +/- 1.00) ~83% believed dealing with psychological facets of sport injury is either important or very important	Qualitative analysis (5-point Likert scale)	~Reported using techniques but expresses need for further training specifically at the post grad level ~Have practical experience and good awareness for psychological aspects of injuries and acknowledge the importance of treating a range of psychological conditions
Arvinen-Barrow. M., Penny. G., Hemmings.B. (2010).	UK chartered physiotherapists' personal experiences	Explore the physiotherapist's personal experiences in	~Acquired knowledge • Limited formal training	Qualitative semi structured interviews	~Recommended that further training on a range of psychological

	in using psychological interventions with injured athletes: An interpretive phenomenological analysis	using psychological intervention techniques as part of sport injury rehabilitation	~Understanding Intervention Techniques • Setting goals is vital ~Experiences on using intervention techniques ~Therapists role in process		techniques would be useful
Clement.D., Arvinen-Barrow.M. (2013)	Sport medicine team influences in psychological rehabilitation: A multidisciplinary approach	~Introduces multidisciplinary approach to rehabilitation through primary and secondary teams ~Details the interactions between members of the multidisciplinary team ~Describes the process of setting up a multidisciplinary team ~Explains benefits of adopting the approach ~Describe roles	~Use of psychological interventions during rehabilitation can help injured athletes in dealing with psychological issues due to injury ~Need for well-rounded holistic care ~Primary team (ATC) ~Secondary team (Sport Psychologist) ~SMP have a large role in both direct and indirect psychological support to injured athletes ~SMP are in an ideal position to address	Chapter of a text pages 156-170. Literature review	

		~Potential problems ~Make recommendations	psychological aspects of injury but also best positioned to facilitate multidisciplinary approach to rehabilitation		
Clement.D., Granquiat,D.M., Arvinen-Barrow,M.M, (2013)	Psychosocial aspects of athletic injuries as perceived by athletic trainers	~Perceived psychological responses and coping behaviors athlete's may present ~Psychosocial strategies ATC's currently use ~Psychosocial strategies ATC's deem important to learn more about ~ATC's current practices in referring	~Psychological responses associated with athletic injuries ~Psychosocial strategies currently used with injured athletes • Short term goals (4.45) ~Psychosocial strategies ATC's would like to learn about • Setting realistic goals (4.22)	Mixed method-online survey containing qualitative and quantitative aspects (5-point Likert s cale)	~Highlight ATC's current use of psychosocial strategies ~Desires to increase current knowledge and understanding of strategies
Cormier, M. L., & Zizzi, S. J. (2015)	Athletic trainers' skills in identifying and managing athletes experiencing	Assess ATC's skills in identifying psychological symptoms, selecting appropriate strategies, and making referral d	~ATC's responsibility • Recognizing psychological responses (yes 91.2%) • Implementin g psychological	Cross sectional study (4-point Likert s cale)	~Previous courses allow individuals the ability to identify symptoms more accurately ~High accuracy in identifying symptoms and making referral

	psychological distress	ecision for athletes experiencing various degrees of psychological diseases	interventions (yes 43%) • Providing counseling for athletes (yes 36%) ~ATC's perceived competency • Goal setting (3.73+/- 0.56)		decisions but struggled in selecting appropriate strategies
Hamson-Utley,JJ., Martin,B.S., Walters,J. (2008)	Athletic trainers' and physical therapists' perceptions of the effectiveness of psychological skills within sport injury rehabilitation programs	Examine attitudes of ATC's and PT's on the effectiveness of mental imagery, goal setting, and positive self-talk to improve rehabilitation adherence and recovery speed to injured athletes	~Accredited program training in psych skills with sport injury • Goal setting (yes 6.39+/- 0.91) (no 6.32 +/- 0.81) ~Formal Setting training in psych skills with sport injury • Goal setting (yes 6.50+/- 0.7) (no 6.10 +/- 0.96) ~Interest in formal training in psych skills with sport injury • Goal setting (yes 6.29 +/-	Quantitative survey (7-point Likert scale)	ATC's had more positive attitudes about effectiveness of psychological skills than PT's

			0.85) (no 5.96 +/- 1.02) ~Setting appropriate rehabilitation goals will help speed up recovery process (agree) • ATC 6.41 +/- 1.01 • PT 5.97 +/- 1.10 ~Setting appropriate rehabilitation goals will help improve adherence (agree) • ATC 6.46 +/- 0.81 • PT 5.92 +/- 1.07		
Kamphoff,C.S., Hamson-Utley,J.J., Antoine.B., Kuntson.B., Thomae. J., Hoenig.C. (2010)	Athletic training students' perceptions of the importance and effectiveness of psychological skills within sport injury rehabilitation	Explore ATC's perceptions of the importance and effectiveness of psychological skills in the rehabilitation of sport injury as well as their academic prep in their use and examine the differences in perceived	~ATC's and PT's had positive perceptions for the effectiveness of psychological skills during rehab ~Post certification practice may serve to improve attitudes about psychological skills that students were once unsure would be helpful	Qualitative Survey	ATC;s agree it is important to treat psychological aspects of injury only 50.6% reported that they had taken a course in sport psychology or psychological skill training

		effectiveness for those with and without formal training	~Upper level student and master students 20% had not taken a course in psychology ~Students thought that goal setting was the most effective way to help an athlete recover from injury		
Stiller-Ostrowski,J.L., Ostrowski,J.A. (2009)	Recently certified athletic trainers' undergraduate educational preparation in psychosocial intervention and referral	To explore the preparation level of recently certified ATC's within the content area of "psychosocial intervention and referral"	~Goal setting was covered to various extents in all undergrad athletic training education programs (ATEP) but 1/11 recalled in-depth practice in goal setting with others ~Some seemed surprised that athletes should play an active role in goal setting ~Most common motivational strategy that ATC's reported learning from ATEPs was goal setting yet most AT students	Qualitative design with semi structured, in depth, focus group interviews	~ATEPs are doing an adequate job of preparing AT student for many common communication and interpersonal issues ~ATC's report being underprepared to deal with athlete related issues in the area of motivation and adherence, counseling and social support, mental skills training, and psychosocial referral

			used only informal goal setting ~All AT students learned about goal setting but couldn't recall many of the primary components of affective goal setting and no training on how to deal with failure to achieve goals		
Stiller-Ostrowski,J.L, Hamson-Utley,J.J. (2010)	Athletic trainers' educational satisfaction and technique use within the psychosocial intervention and referral content area	Assess ATC's satisfaction with educational preparation within the psychosocial intervention and referral content area, confidence in using related techniques and frequency of technique us with in clinical settings	#10: outline a progression of short-term goals for my athlete #11: help my athletes set daily rehab goals ~Majority reporting near complete satisfaction with their education and confidence in their abilities of statements 1-6,9,11 ~Majority (59.9%-74.6%) recalled being educated on these topics during AT education, they	Cross Sectional Survey (online)	Provide educational in most Psychosocial Intervention and Referral (PIR) competency, ATCs have in frequent implementation of techniques in practice

			were less satisfied and confident in these areas statement 1,7,8,10,12-15		
Wiese, D.M., Weiss, M.R., Yukelson, D.P. (1991)	Sport psychology in the training room: a survey of athletic trainers	Survey the attitudes and beliefs of ATC's regarding the application of psychological strategies to injury rehab	~Importance rating of characteristics distinguishing between athletes coping mist vs. Least successful with injury • Goal setting: m=4.09 ~Effectiveness rating of techniques for facilitating athletes a bility to psychologically cope with injury rehab • Focus on short term goals: m=4.30 ~Importance rating for knowledge about strategies for ATC role in dealing with injured athletes • Setting realistic goals: m=4.53	Survey using a Likert scale	Knowledge about using a positive communication style, strategies for setting realistic goals, methods for encouraging positive self-thoughts and understanding individual motivation were rated most important
Zakrajsek,A.R., Fisher,A.L., Martin,B.S.(2017)	Certified athletic	What is the understanding of	~Domain 1: Recognition of	Qualitative research-semi	ATC's utilized basic psychological

trainers' understanding and the use of sport psychology in their practice	sport psychology strategies in their work	common psychology challenges of injury rehabilitation ~Domain 2: Knowledge and understanding of sport psychology ~Domain 3: Utilization of sport psychology skills and strategies for rehabilitation -Goal setting: typical (more than half the cases) • Were knowledgeable about daily physical and performance goals not psychological goals • Goal setting ATC mandated • Didn't emphasize use of different types of goals for different rehab phases	structed interviews	strategies during rehab, findings support need for enhanced psychological recovery

Arvinen-Barrow.M., Massey,V.W., Hemmings.B. (2014)	Role of sport medicine professionals in addressing psychosocial aspects of sport-injury rehabilitation : Professional athletes' views	To explore injured professional athletes views on the role of sports medicine professi onals(SMP) in psychosocial aspects of sport injury rehab	~Psychosocial response to injury • Self-doubt • Frustration ~SMP as the primary treatment provider • Diagnose me, treat me, and make me fit again • SMP-Athlete communication ~SMP role in addressing psychosocial aspects • SMP sets targets and goals • SMP: A source of social support	Qualitative interview	SMP's need to understand psychosocial principles
Brewer,B.W., Van Raalte, J.L., Linder, D. E. (1991)	Role of the sport psychologist in treating injured athletes: a survey of sports medicine provider	~Sports Medicine Physicians surveyed regarding the role of the sport psychologist treating injured athletes ~Physicians perceptions of the frequency of psychological	***Waiting for ILL		Physicians had a moderately positive attitude

		problems with athletic injuries and appropriateness of referring injured athletes with behavioral concerns			
Moulton,M.A., Molstad.S., Tourner.A.(1997)	The role of athletic trainers in counseling collegiate athletics	To assess ATC's perceptions with regard to (A) their role in counseling athletes (B) how qualified they felt to address counseling issues © current training room procedures for providing psychological services to athletes	~Perceived goal setting as a top 5 skill ~ATC's (79%) expressed a need from the NATA for continuing education credits focusing on counseling techniques	47 item open ended survey	~ATC's felt their roles went beyond the care and prevention of injuries, yet they did not feel qualified to counsel athletes ~Recommended that NATA include counseling preparation in curriculums and continuing education be offered
Prentice,W.E. (2017)	Principles of Athletic Training, 16th edition, Page 296		~Goal setting has been shown to be an effective motivator for compliance to the rehab of an athletic injury as well as for reaching goals in a general sport setting		

			~Goals shouldn't be achieved with 1 burst of effort but should be a result from meeting lots of short-term goals before reaching the final goal ~Goals must be challenging but reachable with reasonable effort ~Goals that are easily reachable have no reward ~Goals must be personal and internally satisfying not goals pushed on athlete from ATC ~Incorporate positive reinforcement when goals are met, time management, feeling of social support, feelings of self-efficacy when goals are met		
Zakrajsek.A.R.,Martin,B.S., Wrisberg,A.C.(2015)	Sport psychology services in	~Assess NCAA D1 ATC's perceptions of	~Managing anxiety and emotion ~Improving focus	Web based survey	Positive experience is important

	performance settings: NCAA D-1 certified athletic trainers' perceptions	benefits of sport psychology services for managing the performance demands of practice and competition ~Examine ATC's support for hiring SPC's in athletic departments	~Dealing with pressure ~Building confidence		
Zakrajsek,A.R., Martin,B.S., Wrisberg,A.C. (2016)	National collegiate athletic association division 1 certified athletic trainers' perceptions of the benefits of sport psychology service	~Explore NCAA D1 ATC's experience with sport psychology consultants (SPC) ~Willingness to encourage use of SPC ~Perceptions of the benefits of sport psychology services	~ATC's experience with SPC's ~Willingness to encourage athletes to seek services ~Perceptions of benefits	Quantitative web-based survey	Previous experience is related to more likely using SPC in rehab process
Zakrajsek,A.R., Fisher,A.L., Martin,B.S.(2018)	Certified athletic trainers' experiences with and perceptions of sport	Explore NCAA D1 ATC's experiences and interactions with SPC's as well as their perceptions of the potential	~Domain 1: Knowledge of availability and understanding of SPC's	Semi-structured qualitative interviews	~ ATC's knew that sport psychology services were available, but there was confusio n about how best to use these service

	psychology services for student-athlete	role that SPC's could play in student-athlete development, particularly in injury rehab and sport performance	~Domain 2: Perceptions of SPC's for injury rehab ~Domain 3: Use of SPC's for sport performance	~Psychological skills and strategies of attentional focus, imagery/visualization, and self-talk that SPCs taught student-athletes were important ~ PCs were primarily used by coaches and student-athletes during "big" competitions ~Recognized the performance challenges student-athletes faced and often encouraged student-athletes to see an SPC or integrated the services ~SPCs could help student-athletes transfer skills from practice to competition and cope with the challenge of transitioning into

			and out of college sport ~The “buy-in” of senior ATs, as well as junior ATs, appeared to be an important contributor to the use of SPCs as part of an interprofessional team to help with student-athlete injury recovery

Appendix B

. Questions Q1-Q8 are going to ask you about your current use of sport psychology in practice, specifically focusing on goal setting. Please keep in mind the following definitions.

Mental health is used to refer to emotional, psychological and social well-being (Zimmerman, 2015)

Physical health is defined as the proper care of our bodies for optimal health and functioning (shcs.ucdavis.edu)

Q1. What type of goal setting do you most commonly use with your athlete(s)?

Q2. I believe that the education I received prepared me to use goal setting effectively with my athletes.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q3. I currently use goal setting while working with all athletes.

	Strongly Agree	Somewhat agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q4. I believe the use of goal setting is vital to the success of my athlete.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q5. I currently set daily goals with my athletes.

	Always	Often	Sometimes	Rarely	Never
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q6. I believe that using goal setting is an important aspect when working with athletes.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q7. I believe that setting appropriate goals will help speed up the recovery process for athletes.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

Q8. I believe that setting frequent appropriate rehabilitation goals will help improve the athlete's adherence rate.

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Mental Health Goals	○	○	○	○	○
Physical Health Goals	○	○	○	○	○

. Questions Q9-Q13 are going to assess your knowledge about sport psychology specifically goal setting.

Q9. True or false. When setting goals the main purpose should be to identify clear objectives for the rehabilitation process to enable athletes to return back to full fitness both mentally and physically.

- True
- False

Q10. True or false. Outcome, performance, and process goals are the three types of goals when working with athletes.

- True
- False

Q11. True or false. When setting goals it should be a joint effort between the athlete, ATC, coach, and administration.

- True
- False

Q12. True or false. Long term goals provide direction; while short term goals serve as small intermediate steps that lead to the long-term objectives.

- True
- False

Q13. S.M.A.R.T goals stand for what?

- Serious, Mind,Accurate, Realistic, True
- Specific, Measurable, Attainable, Realistic, Timely
- Special, Measurable, Action, Right, Testable

. Questions Q14-Q17 are going to ask you about barriers you might be experiencing with using sport psychology specifically goal setting.

Q14. I feel that lack of time is a barrier that holds me back from using goal setting on a regular basis.

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Q15. I feel that lack of knowledge is a barrier that holds me back from using goal setting on a regular basis.

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Q16. I feel that lack of experience with the use of goal setting is a barrier that holds me back from using it on a regular basis.

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Q17. Please list any additional barriers you feel hold you back from using goal setting on a regular basis. If none please write none.

. Questions Q18-Q22 are going to ask you about possible future education opportunities.

Q18. I would be interested in learning how to use goal setting more effectively in my everyday practice.

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Q19. I would be interested in learning how to use goal setting more regularly in my everyday practice.

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Q20. If a continuing education opportunity was available my preferred method of delivery for this continuing education would be ___?

- ☐ Handouts
- ☐ CEUs
- ☐ Classes in person
- ☐ Classes Online
- ☐ Other

Q21. Who do you feel is responsible to provide this continuing education? Pick all that apply.

- ☐ NATA
- ☐ BOC
- ☐ Your employer
- ☐ Individual responsibility
- ☐ other

Q22. With more applied knowledge of goal setting what do you think you can do better than what you are doing now?

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. Questions Q23-Q30 are going to ask a little bit about you.

Q23. I identify as a

- Female
- Male
- Undisclosed

Q24. How old are you (in years)?

Q25. What NATA district(s) are you a member of?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Q26. How many years of experience do you currently have as a Certified Athletic Trainer?

Q27. What is the current setting type in which you work?

- Clinic/outreach
- High School
- College/University
- Semi-professional/Professional
- Hospital
- Other

Q28. The following numbers were received from the United Stated Consensus Bureau.
Urban Area includes 50,000 or more people
Rural Area includes at least 2,500 and less than 50,000 people.

What is the location of your current work setting?

- Urban
- Rural

Q29. How many courses (numerical) have you taken on the topic of sport psychology?

Q30. What is the level of education at which you received your ATC degree?

- Bachelor's degree
- Master's degree
- Doctorate

Appendix C
Individual Knowledge Score

Individual	Q9	Q10	Q11	Q12	Q13	Overall score %
1	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
2	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
3	True	False	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
4	True	False	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
5	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
6	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
7	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
8	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
9	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
10	True	True	False	False	Specific, Measurable, Attainable, Realistic, Timely	80%
11	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	60%
12	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
13	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
14	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
15	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
16	False	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
17	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
18	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
19	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
20	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%

21	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
22	False	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
23	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
24	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
25	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
26	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
27	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
28	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
29	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
30	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
31	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
32	True	False	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
33	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
34	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
35	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
36	True	False	n/a	true	Special, Measurable, Action, Right, Testable	40%
37	n/a	n/a	False	n/a	n/a	20%
38	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
39	n/a	n/a	True	n/a	n/a	0%
40	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
41	n/a	n/a	False	n/a	n/a	20%
42	True	False	False	True	Specific, Measurable, Attainable, Realistic, Timely	80%
43	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
44	n/a	n/a	True	n/a	n/a	0%
45	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%

46	n/a	n/a	True	n/a	n/a	0%
47	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
48	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
49	True	True	True	True	Specific, Measurable, Attainable, Realistic, Timely	80%
50	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
51	n/a	n/a	True	n/a	n/a	0%
52	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
53	n/a	n/a	False	n/a	n/a	20%
54	True	False	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
55	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
56	True	True	False	True	Specific, Measurable, Attainable, Realistic, Timely	100%
57	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
58	n/a	n/a	False	n/a	n/a	20%
59	True	False	True	True	Specific, Measurable, Attainable, Realistic, Timely	60%
60	True	True	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	80%
61	n/a	n/a	False	n/a	n/a	20%
62	True	False	n/a	True	Specific, Measurable, Attainable, Realistic, Timely	60%

Appendix D
Manuscript

How Athletic Trainers Use Goal Setting with Injured Athletes

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How Athletic Trainers Use Goal Setting with Injured Athletes

The purpose of the present study was to identify if current Certified Athletic Trainers (ATCs) understand the importance of consistent use of sport psychology, specifically goal setting, in the athletic training room with injured athletes. Participants (n = 77) are current ATCs who have been certified by the Board of Certification (BOC), who had proper licensure in their designated districts, and are members of the National Athletic Trainers Association (NATA). A questionnaire was created to assess the frequency with which they used goal setting, how important and effective they feel goal setting is, and how prepared they feel to use goal setting. In addition, there are questions to determine how knowledgeable participants are on goal setting, barriers they feel stop them from using goal setting with injured athletes on a regular basis, and future education interests to more effectively use goal setting in everyday practice. As hypothesized, our results showed that despite being knowledgeable about goal setting and understanding the importance of goal setting, ATCs did not feel adequately prepared to use it on a daily basis. ATC's set physical health goals more regularly than they did mental health goals. Our results showed that lack of time was a major barrier associated with using goal setting on a regular basis. ATCs are interested in possible future education opportunities and feel like they would be able to provide better services to their athletes with more education.

Key words: Certified Athletic Trainer, Sport Psychology, Goal Setting, Student Athlete

Key Points

- Athletic Trainers understand the importance of goal setting for mental health goals and physical health goals but do not feel adequately prepared to use it on a daily basis.
- Time is considered the biggest barrier as to why Athletic Trainers do not use goal setting on a regular basis.
- Athletic Trainers are interested in continuing education opportunities and feel like they would be able to provide better services to their athletes with more education.

Researchers have shown that ATC's, for the most part, understand the importance of using sport psychology techniques like goal setting, but unfortunately do not feel adequately prepared to use it effectively (Clement, Arvinen-Barrow, 2013; Clement, Granquist & Arvinen-Barrow, 2013; Gordon, 2002; Hamson-Utley, Martin, & Walters, 2008; Kamphoff, Hamson-Utley, Antoine, Thomae & Hoenig, 2010; Moulton et al., 1997; Stiller-Ostrowski, Hamson-Utley, 2010; Stiller-Ostrowski & Ostrowski 2009; Zakrajsek, Fisher & Martin, 2017). In one study, conducted by Clement et al in 2013, out of 215 ATCs surveyed, 160 of them believed that athletes were psychologically affected as a result of their injuries and they expressed an interest about increasing their current knowledge and understanding of psychosocial strategies in order to provide the best possible care. The ATC's expressed that understanding the relationship between athletes' emotional and behavioral responses was important. They also reported not using or having a written procedure as a guideline for making referrals when necessary for psychologically distressed individuals. The authors of the study concluded that it may be that ATCs are using psychosocial strategies they are more confident in using instead of those that are most effective and appropriate (Clement et al., 2013).

When the role of Sport Medicine Professionals (SMP: e.g., ATCs, physiotherapists) in addressing psychosocial aspects of sport-injury rehabilitation was studied according to the view of a group of professional athletes', the athletes stated that they expected to be injured and considered it part of the job of being an athlete (Arvinen-Barrow, Massey, & Hemmings, 2014). They also noted the emotional effect of being injured on their lives- frequent feelings of self-doubt, worry, and frustration on the topic of their career and if they were going to be able to play again. The athletes stated that they expected SMPs to give them tools necessary to move forward in the process of rehabilitation to get back to activity. The athletes stated that they did not recall

their SMPs using any psychosocial strategies during their rehab, but the psychosocial support the athletes received was subtle in the form of goal setting. Unfortunately, the goal setting was set by the SMP instead of it being a joint task between the SMP and the athlete. The authors stated that, like the previous study in 2013, addressing both physical and psychosocial aspects of injuries during rehab is an important and necessary aspect. The most effective SMP are the ones that are able to use subtle interventions to assist athletes in rehabilitation without making them feel like they were receiving psychosocial services (Arvinen-Barrow et al., 2014).

From reading previous research it can be determined that ATC's hold a prime influencer position with athletes' due to the amount of time they spend together. According to the NATA (2011) ATC's are expected to incorporate basic and advanced psychological strategies into rehabilitation programs. Some examples of these strategies include relaxation techniques, imagery, self-talk, refuting negative thoughts, and goal setting.

Goal setting was chosen for the present study because it is one of the most commonly used Sport Psychology skills. ATC's have multiple uses for goal setting. Goals can be used in both physical and mental aspects of sport. For physical goals, some examples would be setting daily practice goals, goals in the weight room, and goals in the rehabilitation setting. Some examples of mental goals are continuing to have a positive attitude during injury rehabilitation although being frustrated or showing up to a rehabilitation session although not wanting to go.

When going through the process of receiving a degree in athletic training some of the course work includes lectures and readings about the importance of Sport Psychology, but experience with applying the techniques is rare. A section of one of the most commonly used textbooks "Principles of Athletic Training" (Prentice, 2017) discusses the importance of goal setting and that it has been shown to be an effective motivator for compliance to the

rehabilitation of an athletic injury as well as for reaching goals in a general sport setting. The textbook includes many of the principles of goal setting such as: goals should not be achieved with one burst of effort but should be an outcome of meeting many small short-term goals before reaching the last and final goal; goals should be challenging but attainable with a reasonable amount of effort; goals that are easily reachable have no personal reward; goals must be personal and internally satisfying for that specific individual athlete, not goals that are pushed onto the athlete from the ATC; goals need to incorporate positive reinforcement when met, managing time in order to make goals a part of everyday life, feeling of social support from coaches and teammates, and feelings of self-efficacy when goals are met (Prentice, 2017).

Many researchers in the past have looked at ATC's and goal setting. Arvinen-Barrow, Hemmings, Weigland, Becker, & Booth (2007) studied the views of chartered physiotherapists on the psychological content of their practice. They found that athletes who cope less successfully with injury have unrealistic goals and expectations (13.85%). The physiotherapists indicated that further training in goal setting would be useful (4.34% +/- 1.00) on a 5-point Likert (1 = *not important*, 5 = *very important*). The conclusion of this study was that physiotherapists reported using techniques but expressed need for further training specifically at the post graduate level. In a second study, Arvinen-Barrow et al. (2010) looked at UK chartered physiotherapists' personal experiences in using psychological interventions with injured athletes. Qualitative results showed four themes: acquired knowledge where physiotherapists stated they had limited formal training; understanding intervention techniques where they stated setting goals is vital; experiences on using intervention techniques; and the therapists' role in process. Again, the physiotherapists' recommended that further training on a range of psychological techniques would be useful.

In 2013, Clement et al. studied the psychosocial aspects of athletic injuries as perceived by athletic trainers. They researched 13 psychosocial strategies currently used with injured athletes and their results showed that goal setting was used almost 100% of the time. The ATC's indicated that they would like to learn more about setting realistic goals. They rated this 4.22 out of 5 on a 5-point Likert scale (1 = *not important*, 5 = *very important*). The conclusion of this study showed the current use of skills, but also that there is a need and want to learn more effective and different ways to incorporate the skills previously discussed.

Cormier and Zizzi (2015) researched athletic trainers' skills in identifying and managing athletes experiencing psychological distress. When surveyed, 91.2% of the ATC's stated that they felt it was their responsibility in recognizing psychological responses (anger, depression, fear, frustration, etc..), and 43% felt it was their responsibility to implement psychological interventions, while only 36% felt it was their responsibility to provide counseling for athletes. On a scale 1 (*not at all competent*) to 4 (*very competent*), ATC's rated themselves, on average, competent in goal setting on ATC's perceived competencies (3.73 +/-0.56). Through doing this research, the authors concluded that previous courses in sport psychology allowed individuals the ability to identify symptoms more accurately than individuals who have not taken a sport psychology class. The ATC's studied had a high accuracy in identifying symptoms and making referral decisions but struggled in selecting appropriate intervention strategies.

Hamson-Utley et al. (2008) looked at athletic trainers' and physical therapists' perceptions of the effectiveness of psychological skills within sport injury rehabilitation programs. Participants reported that the programs they went to varied in whether they included content about using goal setting with athletes; there was a 50/50 chance when going through an undergraduate program that they got some form of training in sport psychology. When asked

whether they agree setting appropriate rehabilitation goals will help improve adherence, the ATC's mean score (of agreeing) was 6.46 out of 7 (1 = *strongly disagree*, 7 = *strongly agree*). These results show that ATC's understand the importance of using goal setting with athletes.

Stiller-Ostrowski and Hamson-Utley (2010) researched athletic trainers' educational satisfaction and technique use within the psychosocial intervention and referral content area. The majority of ATCs, 59.9%-74.6%, recalled being educated on these topics during AT education programs, but they were less satisfied and confident in outlining a progression of short-term goals for athletes. Based on their results, the authors concluded that current programs provide education in most Psychosocial Intervention and Referral (PIR) competencies, but ATCs have infrequent implementation of techniques in practice.

Wiese, Weiss, and Yukelson (1991) surveyed athletic trainers looking at the importance rating of characteristics distinguishing between athletes coping most versus least successful with injury. Their results were that the use of goal setting was rated 4.09 (*important*) on a 5-point Likert anchored by 5 (*very important)*. Effectiveness ratings for techniques to facilitate athlete's ability to psychologically cope with injury rehab were 4.30 (out of 5) for focusing on short term goals. Lastly, they looked at the importance rating for knowledge about strategies for ATC role in dealing with injured athletes and setting realistic goals was rated 4.53 (out of 5). These results showed the authors that knowledge about using a positive communication style, strategies for setting realistic goals, methods for encouraging positive self-thoughts and understanding individual motivation were rated most important.

The studies just discussed have all researched ATC's and their use and views of sport psychology show the importance of using sport psychology in regular practice. Setting and working on goals has many beneficial effects. For example, goals creates space for a variety of

rehabilitation exercises performed, fosters the development of positive self-talk, promotes staying involved with the team although the individual might not be practicing, and encourages open and honest communication with all parties involved (Arvinen-Barrow et al., 2007; Clement et al., 2013; Larson et al., 1996). Goal setting has been proven to increase rehabilitation adherence which as a result allows for successful return to activity (Armatas, Chondrou, Yiannakos, Galazoulas, & Velkopoulos, 2007). Despite these positive benefits, ATC's are lacking the knowledge to incorporate basic psychological skills into a daily practice (e.g., Zakrajsek et al., 2017), even if they had one sport psychology course.

The purpose of the present study was to identify if current ATCs understand the importance of consistent use of sport psychology in the athletic training room with injured athletes and to determine if they feel adequately prepared to use these psychology skills. Cormier and Zizzi's (2015) research discovered that 43% of the population of ATCs studied believed it was their responsibility to implement psychological strategies during the rehabilitation process. The difference between the studies discussed above and in Appendix A is that the present study specifically looked at goal setting, for both mental and physical goals. In addition, individuals were surveyed at a larger scale. The response rate was much larger compared to previous studies. It was hypothesized that ATCs participating in the current study would have the same attitude that previous researchers found which was that ATC's understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. To extend the study, questions were added to identify the current knowledge level ATCs have on the topic of sport psychology and their preferences for further education opportunities/delivery methods. Lastly, questions were added to the survey to understand how current ATCs can use additional information on the topic of goal setting to provide better services than they currently are

providing. This information would allow current and future education programs to adjust their curriculums to improve the confidence of those soon to be ATCs.

Method

Participants

Participants were current ATCs who were certified by the BOC, who had proper licensure in their designated districts, and were all members of the NATA. There was a total of 1000 surveys distributed, and 999 were received, 1 bounced back from the delivery address. Qualtrics showed that only 81 surveys were started, and that resulted in 77 total responses. Three follow up emails were sent out weekly to all 1,000 individuals. The inclusion criteria was that all individuals must be a member of the NATA, and a Certified Athletic Trainer. All genders, and ages were invited to participate. There were 36 females and 17 males (23 individuals did not respond to that question). The average age of the participants was 32 years (*SD* = 8.47; Range = 24-53). Individuals ranged in experience as an ATC from 1 to 38 years (Mean = 8.71, *SD* = 7.34). Their work environment was described by the following: 34% of the individuals worked at a College/University setting (*n* = 18) 26.4% worked at a high school (*n* = 14), 18.9% worked at an "other" setting but did not fill in the blank space provided (*n* = 10), 15.1% worked in clinic/outreach (*n* = 8), 3.8% worked in a hospital setting (*n* = 2), and 1.9% worked in semiprofessional/professional sport setting (*n* = 1). Over half of the sample (*n* = 34; 64.2%) worked in an Urban setting, while 35.8% (*n* = 19) worked in a rural setting. Urban Area includes 50,000 or more people while Rural Area includes at least 2,500 and less than 50,000 people (this definition was provided by the United Stated Consensus Bureau). When asked about the number of sport psychology courses completed, 37.7% (*n* = 20) took 1 class; 13.2% (*n* = 10) took three classes; 11.8% (*n* = 9) took two classes; 9.2% (*n* = 7) took zero classes; 2.6% (*n* = 2) took either six or eight classes; 1.3% (*n* = 1) took four, seven, or ten classes.

Measures

A questionnaire was created for this study. The first section (listed in Table 1) assessed the frequency with which they used goal setting, how important and effective they feel goal setting is, and how prepared they feel to use goal setting. Question one was a qualitative question asking, "what type of goal setting do you most commonly use with your athlete(s)?" These questions used a 5-point Likert scale (1 = *strongly disagree, 5 = strongly agree).*

Five basic goal setting questions made up the second section to determine how knowledgeable the individuals taking part in the study were on goal setting. Each individual got a total score (out of 5) for knowledge where there was one point given for each correct answer. The individual score percentage was calculated by taking the number of correct questions divided by the total questions (5), then multiplying by 100.

Section three included questions that involved barriers (three questions) associated with the use of goal setting. The response scale was a 5-point Likert scale (1 = *strongly disagree, 5= strongly agree).* There was also a qualitative question which asked "Please list any additional barriers you feel hold you back from using goal setting on a regular basis. If none, please write none."

Section four asked individuals about possible future education opportunities (four questions). The response scale was also 5-point Likert (1 = *strongly disagree, 5= strongly agree).* There was also a qualitative fill in the blank that asked "With more applied knowledge of goal setting what do you think you can do better than what you are doing now?"

The last section of questions collected demographic information (gender, age, NATA district, years of experience, current work setting, rural or urban setting, number of sport psychology courses completed, degree at which ATC was received) as reported in the participants section.

Procedure

Approval to conduct this study was granted by the Institutional Review Board (IRB-201910-088) for the Protection of Human Subjects. Distribution of the questionnaires was done through NATA. An email with the purpose and link to the questionnaire was sent out to a random group of 1,000 currently members of the NATA. Three follow up reminders were sent out weekly to all 1,000 individuals. Qualtrics showed that 81 surveys were started and there were 77 complete responses.

Data Analysis

All of the data was imported to SPSS for statistical analysis. For questions related to use, knowledge scores, barriers and future education opportunities, descriptive information was provided and where comparisons were made between physical and mental health categories, *t*-tests were used. For the qualitative questions, responses were sorted and categorized, and common themes were reported.

Results

Use of Goal Setting

For the question: "what type of goal setting do you commonly use with your athlete(s)?", there were 55 responses (some individuals did not answer this question). The common themes were: short term goals (*n* = 22, 40.0%), physical goals (*n* = 17, 30.9%), establish return to play goals (*n* = 11, 20%), long term goals (*n* = 11, 20%), smart goals (*n* = 7; 12.7%), mental goals (*n* = 6, 10.9%), sport specific goals (*n* = 5, 9.1%), personal goals (*n* = 1, 1.8%).

The results from questions about ATCs current use of goal setting are in Table 1 below. Overall means for the frequency questions showed that ATCs were using goal setting, but the means for both mental health goals and physical health goals were the lowest with the question of "I currently set daily goals with my athletes." The overall means for the importance questions showed that ATC's believed that goals are important for both mental health and physical health.

The overall means for the effectiveness questions showed that ATC's believe that setting goals for both mental health and physical health would help improve the athlete's adherence rate and speed up the recovery process for athletes. The overall means for the prepared questions showed that ATC's felt more prepared to set physical health goals compared to mental health goals.

Paired sample *t*-tests were done for each question comparing mental health goals and physical health goals to determine if the means were significantly significant (see Table 1). All means were significantly different from each other (except for one importance "I believe the use of goal setting is vital to the success of my athlete" and one effectiveness item: "I believe the use of goal setting is vital to the success of my athlete") and values were higher for the physical health goals compared to mental health goals. For all questions physical health goals had a higher percentage of agreement compared to mental health goals.

Table 1. Use of Goal Setting

Question	Type of Goals	Mean	SD	Range	% Agreement in some form	*p*
		Frequency				
I currently use goal setting while working with all athletes (*n* = 55)	Mental Health Goals	3.44	1.17	5	52.7%	.00
	Physical Health Goals	4.45	0.86	5	89.1%	
I currently set daily goals with my athletes (*n* = 55)	Mental Health Goals	2.89	0.90	5	25.5%	.00
	Physical Health Goals	3.51	0.92	5	52.7%	
		Importance				

I believe the use of goal setting is vital to the success of my athlete *(n* = 55)	Mental Health Goals	4.53	0.74	5	94.5%	.71
	Physical Health Goals	4.54	0.72	5	96.4%	
I believe that using goal setting is an important aspect when working with athletes *(n* = 55)	Mental Health Goals	4.56	0.60	5	94.5%	.02
	Physical Health Goals	4.65	0.55	5	96.4%	
	Effectiveness					
I believe that setting frequent appropriate rehabilitation goals will help improve the athlete's adherence rate. *(n* = 55)	Mental Health Goals	4.38	0.68	5	89.1%	.01
	Physical Health Goals	4.56	0.61	5	92.7%	
I believe that setting appropriate goals will help speed up the recovery process for athletes (*n* = 55)	Mental Health Goals	4.29	0.74	5	87.3%	.40
	Physical Health Goals	4.22	0.81	5	89.1%	
	Preparedness					
I believe that the education I received prepared me to	Mental Health Goals	3.44	1.17	5	52.7%	.00

use goalsetting effectively with my athletes (*n* = 55)	Physical Health Goals	4.45	0.86	5	89.1%

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Goal setting knowledge

As shown Table 2, the average score for the knowledge test was 4 out of 5 (80%). The toughest question was: When setting goals it should be a joint effort between the athlete, ATC, coach, and administration (True or False).

Table 2. Knowledge Quiz

Question	Correct Answer	% Correctly Answered
True or false. When setting goals the main purpose should be to identify clear objectives for the rehabilitation process to enable athletes to return back to full fitness both mentally and physically. (*n* = 53)	True	96.2%
True or false. Outcome, performance, and process goals are the three types of goals when working with athletes. (*n* = 53)	True	75.5%
True or false. When setting goals it should be a joint effort between the athlete, ATC, coach, and administration. (*n* = 53)	False	48.1%
True or false. Long term goals provide direction; while short term goals serve as small intermediate steps that lead to the long-term objectives. (*n* = 53)	True	98.1%
S.M.A.R.T goals stand for what? (*n* = 53)	Specific, Measurable, Attainable, Realistic, Timely	98.1%

*Answer: 1 = *True*; 2 = *False*

Barriers of Use

For the qualitative question: "what barrier they felt held them back from being able to use goal setting on a regular basis," there was a total of 41 responses (some individuals did not answer this question). The common themes were: compliance/buy in (*n* = 13, 31.7%); ATC to athlete ratio (*n* = 5, 12.2%); relatability to athlete (*n* = 3, 7.3%); accessibility (*n* = 2, 4.9%); "I don't feel qualified to address mental health as an ATC" (*n* = 1, 2. 4%); 17 participants wrote in "none" (41.5%).

Descriptive results (see Table 3), showed that ATC's felt that lack of time was a bigger barrier compared to lack of knowledge and lack of experience. Overall means were at or below the midpoint of the scale indicating that these were not major barriers.

Table 3. Barriers of Use

Question	Mean	Standard Deviation	Range	% Agreement in some form
I feel that lack of time is a barrier that holds me back from using goal setting on a regular basis. (*n* = 53)	3.74	1.11	5.0	71.7%
I feel that lack of knowledge is a barrier that holds me back from using goal setting on	2.62	1.11	5.0	22.6%

a regular basis. (*n* = 53)				
I feel that lack of experience with the use of goal setting is a barrier that holds me back from using it on a regular basis. (*n* = 53)	2.72	1.22	5.0	37.7%

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Future Education Interests

For the question: "with more applied knowledge of goal setting what do you think you can do better than what you are doing now?" there was a total of 47 responses (some individuals did not answer this question). The common themes were: increase positive outcomes (*n* = 18, 38.3%); increase frequency of goal setting use (*n* = 15; 31.9%); increase education for all individuals involved (*n* = 9; 19.1%); increase compliance (*n* = 6, 12.8%); yes more education would help improve the care currently given (*n* = 6, 12.8%); nothing would change (*n* = 4; 8.5%); better mental wellbeing throughout return to activity process (*n* = 3, 6.4%).

Descriptive results (see Table 4) show that overall ATC's were very interested in future education interests. They were equally as interested in learning how to use goal setting more effectively in their everyday practice as they were in learning how to use goal setting more regularly in their everyday practice. They saw the value in learning how to become more proficient in both goal setting knowledge and effectively implementing goal setting.

Table 4. Future Education Interests

Question	Mean	Standard Deviation	Range	% Agreement in some form
I would be interested in learning how to use goal setting more effectively in my everyday practice. (*n* = 53)	4.06	0.95	5.0	79.2%
I would be interested in learning how to use goal setting more regularly in my everyday practice. (*n* = 53)	4.06	0.95	5.0	79.2%
Select all that apply				
If a continuing education opportunity was available my preferred method of delivery for this continuing education would be ___? (*n* = 53)	CEUs- 32 (60.4%) Classes online- 30 (56.6%) Classes in person- 11 (20.8%) Handouts- 7 (13.2%)			
Who do you feel is responsible to provide this continuing education? Pick all that apply. (*n* = 53)	NATA- 38 (71.7%) Individual Responsibility- 37 (69.8%) BOC- 25 (47.2%) Employer- 20 (37.75) Educational Institution- 1 (1.9%) State Association- 1 (1.9%)			

*Rating Scale: 1 = *Strongly Disagree*; 2 = *Somewhat Disagree*; 3 = *Neutral*; 4 = *Somewhat Agree*; 5 = *Strongly Agree*

Discussion

The purpose of this study was to identify if current ATCs understand the importance of consistent use of sport psychology in the athletic training room with injured athletes and to determine if they feel adequately prepared to use these psychology skills. The results showed that current ATCs understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. It was hypothesized that ATCs participating in the current study would have the same attitude that previous researchers found which was that ATC's understand the importance of sport psychology, but do not feel adequately prepared to use it on a daily basis. Our hypothesis supports past studies (e.g., Clement, Arvinen-Barrow, 2013; Clement et al., 2013; Gordon, 2002; Hamson-Utley et al., 2008; Kamphoff et al., 2010; Moulton et al., 1997; Stiller-Ostrowski, Hamson-Utley, 2010; Stiller-Ostrowski & Ostrowski 2009; Zakrajsek et al., 2017). From the results, the hypothesis can be determined to be true.

From the results on the use of goal setting, ATCs understand that goals are important for both mental health and physical health. This result is supportive of Arvinen-Barrow et al. (2014). ATC's believed that setting goals is beneficial for both mental health and physical health. They also believed that increasing the frequency of use would help improve athlete's adherence rate and speed up the return to activity process for athletes. ATC's, overall, felt more prepared to set physical health goals compared to mental health goals which could be the reason that they are using goals but doing so more often with physical health compared to mental health. The differentiation between mental and physical health extends research in this area showing that there is a comfort with physical health goals, but not mental health goals. These results are consistent with results from Clement et al. (2013). They showed that ATCs were using psychosocial strategies they were more confident in using instead of those that may be most effective and appropriate. We know that mental health is extremely important especially for

student athletes so education in this area might be beneficial for ATCs. From past research done by Arvinen-Barrow et al. (2014) and the current study, we can conclude that addressing both physical and psychosocial aspects of injuries during rehab is an important and necessary aspect (Arvinen-Barrow et al., 2014). Hamson-Utley et al. (2008) results also showed that ATCs understand that setting appropriate rehabilitation goals will help improve adherence.

Regarding goal setting knowledge, the results showed that the ATC's were knowledgeable on the topic of goal setting. This result is supportive of the competencies put forth by the NATA that "ATCs should be able to select and integrate appropriate psychosocial techniques into a patient's treatment or rehabilitation program to enhance rehabilitation adherence, return to play, and overall outcomes. This includes, but is not limited to, verbal motivation, goal setting, imagery, pain management, self-talk, and/or relaxation" (p. 33) (NATA.org). The question that was the most challenging asked which individuals should be involved in the goal setting effort. We know that ATC's have proper knowledge with goal setting but are missing a piece of the puzzle that allows them to properly use it. Cormier and Zizzi (2015) research supports our findings in the fact that the ATC's they studied had a high accuracy in identifying symptoms and making referral decisions but struggled in selecting appropriate intervention strategies. This disconnect between knowledge and use was also evident in a study conducted by Arvinen-Barrow et al. (2014). The athletes in that study stated that they expected SMPs to give them tools necessary to move forward in the process of rehabilitation to get back to activity. The athletes stated that they did not recall their SMPs using any psychosocial strategies during their rehab, but the psychosocial support the athletes received was subtle in the form of goal setting. However, there was not a joint effort between both the ATC and the athlete to set

these goals. The goal setting was set by the SMP instead of it being a joint task between the SMP and the athlete (Arvinen-Barrow et al., 2014).

Also related to the knowledge results is the finding that ACTs who do not set goals are not setting them because they have a lack of knowledge on the topic of goal setting, but rather lack of time was a bigger barrier. This situation is extremely common especially in the high school setting where sometimes there is only one ATC employed for the entire school. There were only ten ATCs who indicated that they strongly disagree/somewhat disagree that lack of time was a barrier that holds them back from using goal setting on a regular basis showing that most ATCs thought time was a barrier. For the other barriers, 27 ATCs strongly disagree/somewhat disagreed to the statement of "I feel that lack of knowledge is a barrier that holds me back from using goal setting on a regular basis." This result shows that a majority of the ATC's feel that time is a barrier. Twenty-five ATCs strongly disagree/somewhat disagree to the statement of: "I feel that lack of experience with the use of goal setting is a barrier that holds me back from using it on a regular basis." One individual stated "I don't feel qualified to address mental health as an ATC." This statement proves that in addition to time there are additional barriers to why ATCs do not use goal setting on a regular basis with their athletes.

Regarding future education interests, ATC's revealed that they were very interested in learning more about goal setting. This finding supports other studies findings such as Arvinen-Barrow et al. (2007), Arvinen-Barrow et al. (2010), and Clement et al (2013). More specifically, ATC's were equally as interested in learning how to use goal setting more effectively in their everyday practice as well as learning how to use goal setting more regularly in their everyday practice. ATC's see the value in learning how to become more knowledgeable about goal setting knowledge and proficient in effectively implementing goal setting.

Although we sent surveys to 1,000 individuals our overall return rate was very low. To get a higher return rate future researchers should look into what time of the year do ATCs have more down time. More down time for ATCs could equal a higher return rate. Future researchers should look at how to improve the academic curriculum requirements to receive a degree in Athletic Training to include more academic requirements on the topic of sport psychology as a whole. How specifically does increasing the use of goal setting with athletes improve things such as adherence, return to play, confidence, etc. Digging deeper into the idea of if ATCs really do understand the importance of goal setting then why are they continuing to not using it. Knowledge does not equal behavior change. It would be beneficial for future research to study that disconnect and find what we can do to bridge that gap. Are there additional barriers that are present that we did not touch on or ask about? Are there additional avenues that ATCs would like to receive more information? Such as an informational app or something along those lines. A qualitative study into why there is a disconnect with having the knowledge on goal setting but why the knowledge is not being put into action would be beneficial to Athletic Training as a field and to the athletes these ATCs are treating. Additional research should look at other ways that sport psychology skills could be incorporated into the athletic training room. Skills such as but not limited to imagery and self talk.

In conclusion, the results of this study verified that ATC's do understand the importance of goal setting for both physical and mental health, and they are knowledgeable about it. ATCs were more comfortable using goal setting when using it for physical health goals compared to mental health goals. ATC's know that using goal setting can positively influence their athlete both physically and mentally. Time was considered the biggest barrier as to why goal setting was not used on a regular basis. Lastly, current ATC's are interested in and would like to receive

more education to learn how to more effectively use and implement goal setting for physical and mental health on a regular basis. ATC's hold a prime influencer position with the athletes that they work with. Providing ATC's the opportunity to gain more knowledge on the topic of sport psychology will not only improve the care for the mental side of athletics, but in return will also improve the care of the physical side of athletics. Athletes know that injury is part of being an athlete, but if we are able to mentally prepare these athletes for what lies ahead, in return they will also be physically prepared.

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