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**Athletic Trainers and Psychosocial Intervention: Which Skills Are Retained and Used Most Often in Practice**

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ATHLETIC TRAINERS AND PSYCHOSOCIAL INTERVENTION: WHICH SKILLS ARE  
RETAINED AND USED MOST OFTEN IN PRACTICE

BY

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To the Dean of the School of Nursing and Health Sciences:

I am submitting herewith a these written by Jasmine Nicole Oates entitled “Athletic Trainers and Psychosocial Intervention: Which Skills Are Retained And Used Most Often In Practice.” I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science with a major in Human Performance and Wellness with a specialization in Sport, Exercise, and Performance Psychology.

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Dr. Kimberly Cologgi, Thesis Committee Chair

We, members of the thesis committee  
have examined this thesis and  
recommend its acceptance:

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Chair, Department of Sport and Exercise  
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**ABSTRACT**

Athletic trainers are the primary healthcare provider when an athlete sustains a sport injury. The athletic trainer's responsibility is to assist an athlete through a rehabilitation protocol, so the athlete can return to full participation. In the past, emphasis has been primarily placed on the physical aspects of sport injury and athletic trainers focused on healing just the injury, not the whole athlete. The athletic training community now understands that there are psychological factors to injury and the community has turned to holistic healthcare to help treat athletes. To establish holistic healthcare, the Psychosocial Intervention and Referral component was added to athletic training curriculum to produce athletic trainers who could assist with the physical and mental hurdles of an injury. Even though the Psychosocial Intervention and Referral component was added, certified athletic trainers may still lack confidence in implementing and teaching the psychosocial skills to their athletes.

Since athletic training education programs will be offered exclusively at the master's level beginning in the 2020 academic year, it is important to have a Psychosocial Intervention and Referral education policy in place to optimize the skills in the shorten amount of educational time. In order to begin building a policy there needs to be an understanding of the confidence levels of practicing athletic trainers, what skills are being used, and how those skills are being used. Knowing these elements can help athletic training curriculums know what has worked and where gaps may need to be filled.

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## CHAPTER I

### INTRODUCTION

Sports play a vital role in modern society and are an integral part of life essential for the mental and physical well-being of individuals (Craig & Beedie, 2008). People begin playing sports for various reasons, but no matter the reason there a multitude of benefits that come from participation. The common benefits of participating in sports include: improving health and fitness levels, positive social interaction, increased self-confidence, and having an outlet for stressors (Hausenblas & Rhodes, 2016). While sport activities are a source of great satisfaction and benefit, they can become a source of pain and despair due to injury. As rates of participation continue to increase in sports, so has the rate of sport injury (U.S. Centers for Disease Control). Sport injury is often a traumatic event where emotional and psychological reactions are negative. Each injury experience is unique and influenced by an array of situational and personal biopsychosocial factors that interact, before, during and after the injury occurrence.

Sports medicine professionals (SMPs) have been the forefront option to assist an athlete that has sustained an injury. SMPs have a wide knowledge of injuries and have the skills to heal physical damage of an injury and get an athlete back into physical shape to return to participation. However, SMPs may still be lacking the necessary tools to assist with the psychosocial damage an injury can leave with an athlete. SMPs understand an injury can cause psychological damage and the importance of a holistic approach when assisting an injured athlete, yet do not have formal educational guidelines in place to ensure that SMPs will be able to effectively assist an injured athlete. To begin an outline of what may need to go into the SMP educational guidelines, it is important to know what information is being taught, what information is being retained, and what information is being used in daily practice. Knowing this

information can give insight and direction on how create educational guidelines to best benefit SMPs.

The present study looks to investigate the relationship between athletic trainers and their use of psychological interventions within their practice. The Psychosocial Intervention and Referral (PS) competency was established into the athletic training curriculum in 2006, but there has yet to be formal educational guidelines on how PS should be taught to benefit both athletic trainers and the populations they oversee. To begin discussion of setting PS guidelines, emphasis should be placed on understanding how current athletic trainers are taught PS skill(s) knowledge, which skill(s) are implemented during practice, and how the skill(s) are being instructed to athletes. Understanding those techniques will give some insight on what areas of the PS competency need to be addressed to make more confident, holistic healthcare practitioners.

The purpose of this study is to help benefit current athletic training programs, so they can know how to address specific areas lacking in their current curriculum. The proposed study would also benefit the future direction of athletic training programs, especially since athletic training is transitioning to a master's level degree. Since athletic training has made the decision to transition, that means less years to acquire all athletic training knowledge and competencies. It is important to have guidelines in place to ensure athletic training students are proficient and give holistic health care to their patients. The proposed study aims to benefit instructors, preceptors, athletic training students, and medical personnel by helping to understand and identify how signs and symptoms of injured athletes are being recognized and what methods athletic trainers have used, with success in treating those signs and symptoms.

## CHAPTER II

### REVIEW OF LITERATURE

#### **Injury In Sport**

Participation in sport has many positive benefits, such as increased healthy lifestyle, gain of social support, and increased confidence; but there is still an assumption of risk that can lead to negative outcomes. A major risk while being involved in athletics is sustaining a sport injury. Berger, Pargman, and Weinberg (2007) define a sports injury as “trauma to the body or its parts that result in at least temporary, but sometimes permanent physical disability and inhibition of motor function” (p.186). Frequent involvement in sports places participants under intense physical and psychological pressure and stress. That intense stress magnifies the likelihood of an injury occurring. In the United States people participating in sport, exercise, and other recreational activities incur an estimated total of 7 to 17 million injuries per year (Booth 1987; Conn, Annest, & Gilchrist, 2003).

There are two major categories of injury that an athlete can sustain; acute or chronic. Acute injury is one where an individual has a sudden onset of symptoms resulting from a specific incident. Chronic injury has a slow, insidious onset of symptoms that culminates in a painful inflammatory condition (Anderson & Parr, 2013). With acute injury, it is simple to pinpoint the single forceful event to determine exactly when and how the injury happened. For example, a volleyball athlete landing improperly after a hit resulting in an anterior cruciate ligament (ACL) tear. Whereas a chronic injury occurs over time from repetitive, low-force stressors so there is difficulty knowing when the injury first occurred. A common chronic injury is a torn medial ulnar collateral ligament (Tommy John Injury) in baseball pitchers. The overhead throwing motion puts extreme stress on the ligament and causes microscopic tears; over time the ligament is repeatedly stretched until it can no longer hold the joint in place to properly throw.

Although athletes do not plan to get injured and attempt to avoid the entire experience (Pargman, 1999), virtually all athletes will sustain an injury in their career that can temporarily (or permanently) hinder sport participation (Taylor and Taylor, 1997). Most injured athletes have the potential for full recovery to, at least, pre-injury performance and fitness levels with the assistance of medial knowledge and technology. However, numerous athletes fail to get back to pre-injury level and this failure is often attributed to the psychological factors that accompany an injury (Taylor and Taylor, 1997). These psychological factors create another hurdle for an injured athlete to face. It is important to have knowledge of possible psychological factors that can accompany an injury to properly assist and rehabilitate an injured athlete.

### **Psychological Impact of Injury**

Physical damage and restrictions of an injury are typically easily visible, but an injury can have an effect that is beyond physical ailment. The risk of injury, being injured, rehabilitation demands, and career ending injuries can result in psychological distress in an athletic individual (Feltz, D.L., 1986; Team Physician Consensus Statement, 2006). Psychological distress is largely defined as the state of emotional suffering (Mirowsky and Ross, 2002) and can be associated with an individual's internal state (i.e., psychological/emotional) and external stressors (i.e., sociological, cultural, and contextual) (Gourlay L., Barnum M., 2010). Over recent years evidence has grown to support sustaining an injury is a significant stressful experience that may challenge the psychological resources of an athlete. Most athletes appear to be affected psychologically when an injury occurs, and these responses have a significant impact on the quality and speed of the rehabilitation process (Brewer B.W., 1994; Pearson L., Jones, G., 1992; Ievleva L., Orlick T., 1991).

There are many signs and symptoms of psychological distress; Anderson and Parr (2013) state some of the commonly seen instances are social withdrawal, emotional outbursts, excessive worry, changes in sleep pattern, changes in appetite, denial of injury, signs and symptoms of depression and anxiety, lack of motivation, poor judgement, change in mood, and suicidal thoughts. A majority of these symptoms can be seen in injured athletes during the injury process and can undermine an individual's ability to self-regulate future behavior (Bandura, 1997). Emotions such as fear of not knowing what is in their future, anger about sustaining an injury, and depression from being unable to participate in sport (Faris, 1985) are normal responses shown after a traumatic injury. Anxiety, another symptom shown by injured athletes, physiologically appears as muscle tension, increased heart rate, throat constriction, gastrointestinal dysfunction, excessive worrying, concentration disruption, apprehension, and negative images (Leddy M.H., Lambert M.J., Ogles B.M., 1994). Injury has also been shown to decrease self-esteem which can result in irrational thinking (Beck, 1970) when something seemingly small seems to go array; such as an athlete believing they will never amount to anything in life because they forgot the progression of their rehabilitation exercises. Evans & Hardy (2002) found shock and feelings of helplessness can be present at the time of initial injury. After the onset of injury feelings of separation, loneliness, guilt and loss of identity can occur during the rehabilitation phase because athletes may feel like they no longer contribute to the team (Lewis-Griffith, 1982). These symptoms can happen at any time during the injury process, but there are certain stressors in each phase that can exacerbate symptoms if the athlete does not have proper coping mechanisms to combat and overcome symptoms.

The phases of injury include: onset of injury, rehabilitation process, and return to play. Each phase comes with its own unique stressors and challenges for the recovering athlete. Onset

of injury is the phase associated with the highest number of injury-related stressors (Evans et al., 2012) that have been shown to cause psychological distress. These stressors include: diagnosis of sustained injury, severity of injury, lack of knowledge of the injury and the recovery process, missed opportunities, loss of routine, isolation, boredom, unwanted attention and loss of independence (Evans et al., 2012). If an athlete is unable to successfully cope with the onset of injury stressors, their rehabilitation process could be hindered and lead to rehabilitation stressors on top of the initial stressors.

Next, are the stressors associated with the Rehabilitation stage. The rehabilitation stage begins after a confirmed diagnosis and ends when the athlete returns to play (normal activities of daily living if the injury is career ending). Rehabilitation stressors include: lack of rehabilitation progress, rehabilitation setbacks, medical team/treatment, external pressure, internal pressure, and social comparison (Evans et al., 2012). Even after an athlete progresses through the rehabilitation protocol and has been cleared to practice and/or play there may still be some lingering stressors once the athlete is trying to return to their competitive sport. Stressors such as risk of re-injury, loss of fitness, medical/recovery outcome, internal pressure and external pressure (Evans et al., 2012). From onset of injury all the way through return to play, injured athletes deal with perceived stressors and need to know how to successfully cope in order to heal the whole athlete.

### **Mental Skills Training**

For decades, the focal point of mental skills has been to enhance athletic performance while competing in sport (Mack & Ragan 2009), but there has been a shift and researchers have begun to outline the importance of considering how mental skills can aid within the injury process (Cormier & Zizzi, 2015). Mastering mental skills enhances one's ability to

stand tall in the face of adversity and to rebound from setbacks and failures (Goldberg, 1998) such as injury. Research has explored the benefits and outlines how mental skills can assist an athlete in injury prevention, injury rehabilitation, and return to sport by introducing affective coping mechanisms.

The way to gain or enhance coping mechanisms is to increase mental toughness through the practice of mental skills training. Mental toughness is the psychological edge that enables an individual to consistently cope with pressures and demands of their environment (Jones, G., Hanton, S., Connaughton, D., 2002). Mental skills training refers to the systematic and consistent practice of techniques and strategies designed to enhance mental skills that facilitate optimum performance (Vealey & Campbell, 1988). The most common mental skills used in athletics are imagery, goal setting, self-talk, and relaxation techniques; these mental skills have all been documented as useful in facilitating, maintaining, and improving athletic performance (Mack & Ragan, 2009).

Imagery is described as cognitively reproducing or visualizing an object, scene or sensation as though it were occurring in overt, physical reality. It evokes the physical characteristics of an absent object, event or activity that has been perceived in the past or may take place in the future (Dent [1985] cited in Driediger, Hall, and Callow, 2006: 262). Imagery is an activity that creates a clear mental picture and is often viewed as “the cornerstone of sport psychology interventions” (Cornelius, 2002: 206). Based on Paivio’s (1985) analytic framework, sport imagery has cognitive and motivational functions that operate on a specific or general level. The cognitive general function involves imaging routines, game plans, or strategies, while the cognitive specific function involves imaging skills that are sport specific. The motivational



general function of imagery includes imaging physiological arousal levels and emotions, and the motivational specific function includes imaging individual goals.

Goal-setting involves identifying an objective an athlete would want to accomplish within a timeframe and working towards that achievement (Weinberg, 2002). Goal setting is one of the most widely used psychological interventions when it comes to improving performance (Weinberg & Gould, 2011). Hardy, Jones, Gould (1996) and Cox (2007) have identified three types of goals: outcome performance and process goals. Outcome goals focus on the outcome of event and involve interpersonal comparison such as winning the championship or being awarded a place on the all-star team. In contrast, performance goals usually involve intrapersonal assessment focused on achieving a particular level of performance compared to one's previous performances. Process goals focus on actions and tasks an individual must engage in to achieve a performance outcome.

Self-talk can be summed up to "what athletes say to themselves out loud or internally and privately" (Van Raalte, 2010: 510). The content of one's self-talk can vary in both valance and function. Valance is determined by the affective tone of self-talk: positive (e.g. praising) or negative (e.g. criticizing). The term function can serve both instructional and motivation purposes of self-talk. Instructional self-talk provides specific direction regarding how to behave, think, or feel, while motivational self-talk encourages persistence and commitment to goal achievement (Tod, Hardy, & Oliver, 2011).

Relaxation techniques, in sport, have been used to describe a range of methods that an athlete can use to facilitate physical and psychological wellbeing (Walker & Heaney, 2013) usually split into two categories: physical (somatic) and mental (cognitive) relaxation (Flint, 1998). Physical relaxation has the primary goal of releasing tension that has built up in the body.

Progressive muscle relaxation, breath control techniques, diaphragmatic breathing, ratio breathing, and biofeedback are commonly used physical relaxation techniques that have been applied in the sport setting. Mental relaxation techniques, in contrast, focus specifically on the mind with the belief that a relaxed mind will in turn cause the body to relax. The primary mental relaxation techniques employed are autogenic training and transcendental meditation.

### **Mental Skills training for injury prevention**

The only guaranteed way to ensure an individual will never sustain an athletic injury is to cease participating in sport. Since that is an unrealistic expectation, injury prevention guidelines have been established to attempt to reduce the risk of sustaining an injury. Injury prevention is a broad spectrum of knowledge and skills that address the risks associated with safe performance and function (Anderson & Par, 2013). There still needs to be research conducted on how mental skills are used to assist injury prevention, but there is significant research on the importance of understanding psychological factors which may predispose an individual to injury. Andersen and Williams (1988) developed the stress and injury model that explained the psychology underlying the occurrence of sport injuries. According to the model, the likelihood of injury will be influenced by an athlete's perception of stress in a given situation. The model states an athlete's personality, stress history, and coping resources all influence the cognitive appraisal which can either intensify or alleviate response to stress within an athletic environment. In 'lay terms' the basic idea of the model is that athletes who have a personality that exaggerate stress, have a history of multiple stressors, and lack of effective and available coping resources are more likely to have cognitive appraisals of athletic environments that increase their risk to sustain an injury.

Personality can affect what situations an athlete perceives as stressful (Petrie, 1993). An example is a positive correlation between sport injury occurrence and trait anxiety (Petrie, 1993),

hardiness, locus of control, competitive trait anxiety and achievement motivation (Williams & Andersen, 1998). Furthermore, Pedersen (2007) stressed a relationship between perceived injury risk and aggregate aggression. Research clearly indicates a positive connection between sport injuries and high stress levels (Patterson et al., 1998; Maddison & Prapavessis, 2005). If elevated risk athletes can be identified before, or early in sport participation, then mental skills could be a main component in their injury prevention plan. Knowledge of the stress and injury model is a key factor in screening athletes that may be at increased risk to sustain an injury. Emphasis of the importance of the injury-stress model should be understood by the medical support staff that is overseeing the athlete. This tool can be utilized in future research to assist with decreasing the risk of injury with mental skills.

### **Mental Skills training during injury rehabilitation**

Even though there are injury prevention guidelines in place, injuries can still occur. After an injury is sustained and diagnosed a rehabilitation plan can be designed and implemented to assist an athlete with returning to sport participation. Rotella and Heyman (1986: 343) remarked that “the future will demand that injury rehabilitation include both physical and psychological components” for best athlete care. Mental skills are beginning to be integrated more into rehabilitation protocols and literature has supported their use to aid athletes in recovery (Clement, Granquist, & Arvinen-Barrow 2013). For example, imagery, positive self-talk, goal setting, and relaxation techniques have been useful in aiding athletes cope with stress, anxiety, and pain as well as addressing self-efficacy, self-esteem, and confidence-related apprehensions (Ievleva, L. and Orlick, T, 1991; Beneka, A., Malliou, P., Bebetos, E., Gioftsidou, A., Godolias, G. 2007). Mental skills can also help with rehabilitation adherence and motivation concerns (Flint, 1998). Goal setting is the most popular technique used regardless of the cultural context

(Evans & Hardy, 2002). Theodorakes, Malliou, Papaioannou, Benneca, and Filactakidou (1996) found significant increases in knee extension for injured athletes that had set goals compared to injured athlete that did not have set goals. The researchers also reported significant correlations between goal setting and self-efficacy, self-satisfaction, and performance. Earlier research has also pointed to potential of goal setting as a means of enhancing behaviors of adherence. Duda, Smart, and Tappe (1989) conducted a correlational study that found injured athletes who adhered closely to their rehabilitation protocol were more goal directed and put more emphasis on mastery or task involved goals.

Imagery is another mental skill that can be implemented to aid the recovery process, Weiss and Troxel (1986) advocated for visualizing successful rehabilitation as a useful strategy. Imagery helps athletes cope with pain, speed up recovery, give a positive outlook, keep physical skills from decreasing, and reduce both state and re-injury anxiety (Vealey & Greenleaf, 2001; Williams, Rotella, & Scherzer 2001). Imagery has also used to assist in the healing of fractures and hip disarticulations (Korn, 1983) and as a tool in stress management (Hanley, G. & Chinn, D., 1989). Rehearsing the movement in one's mind has been shown to keep the body active and send blood to the injured area for faster healing (Ievleva, L. and Orlick, T., 1991; Sarno, J., 1984). Imagery relies on the foundation of relaxation to help normalize blood pressure, oxygen consumption, respiratory rate and muscle tension (Benson & Klipper, 2000; Jacobs, 2001).

The literature proposes that relaxation techniques are useful for two primary reasons: to control and assist in helping with pain and reduce the symptoms of anxiety. With relaxation techniques perceptions of pain can be reduced and pain tolerance can be improved (Carrol & Seers, 1998; Jessup & Gallegos, 1994) which may reduce the need for pain medication (Payne, 2004). Improvements have also been reported for swelling and range of motion after relaxation

techniques (Christakou & Zervas, 2007). Even though there has been limited empirical research, self-talk has also shown to have benefits while used during the rehabilitation process specifically for joint restoration, muscular strengthening, and rehearsing skills while injured (Beneka et al., 2007). In a retrospective study Ievleva and Orlick (1991) showed a link between the use of positive self-talk and recovery time; fast healers reported greater use of self-talk compared to their slower healing counterparts. Being able to generate positive emotions that contribute to an enhanced quality of rehabilitation is another benefit of positive self-talk. The rehabilitation phase has the most research in connection with the benefit of mental skills. Support staff can use research to implement which skills would most benefit each athlete based on the symptoms displayed during rehabilitation.

### **Mental Skills training for return to sport**

To date there has been no research on adherence to mental skills once an athlete has been fully cleared to return to sport participation. Research supports that mental skills can be transitioned (cite) [to return to sport after rehabilitation], but not if an athlete actually uses mental skills after the rehabilitation protocol has been completed. Future research should investigate how to educate injured athletes on how to use mental skills once they are cleared and how to increase adherence once they have finished rehab. Research should also look at the best way for healthcare practitioners to teach athletes how mental skills can be utilized in return to sport to decrease anxieties and help prevent further injuries.

### **Psychological Competencies of Athletic Trainers**

The medical personnel that will have the most interaction with an injured athlete is an athletic trainer (AT). Athletic trainers are healthcare professionals that specialize in preventing, assessing, managing and rehabilitating injuries (Anderson & Parr, 2013). In conjunction with

physicians, other allied health personnel, administrators, coaches, and parents the athletic trainer functions as a keystone member of the sports medicine team (Prentice, 2011) in clinics, secondary schools, colleges and universities, professional sports, and other athletic health care settings to ensure the injured athlete is getting the best care possible. The athletic trainer will typically be with the athlete pre-injury, at the onset of injury, during the rehabilitation phase, and through return to competitive sport play (e.g. if the injury is not career ending). The AT works with an athlete pre-injury for the purposes of preventative techniques and to build rapport. At the onset of injury, the AT is on scene to do an initial evaluation of the damage and give a probable diagnosis. Throughout the rehabilitation process the AT is there to assist with exercise protocol and record progress being made by the athlete. The AT continues to oversee the athlete through return to competitive sport play to monitor progress and prevent patterns that may bring about re-injury; thus, causing a cycling relationship. Though ATs work with other allied healthcare specialists, usually, after the diagnosis is confirmed and any major procedure [if needed] is complete, the AT oversees the daily rehabilitation and has the most interaction with the injured athlete which highlights the need to develop competence in the psychological aspects of injury rehabilitation.

Athletic trainers gain extensive knowledge of sport injuries before they are eligible for certification. To become eligible for certification, (NATABOC, 2018) two conditions must be successfully completed. The first step is to complete an entry-level bachelor or master's program that is accredited by the Commission on Accreditation of Athletic Training Education (caATE). After completing a program, the second step is to sit for -and pass- the Board of Certification (BOC) exam. After achievement of those two benchmarks, to remain certified, a professional must attain a certain number of continuing education units (CEUs) in a certain time frame to

continue practicing the profession (NATABOC, 2010). The purpose of caATe (2017) is to develop, maintain, and promote appropriate minimum education standards for quality for athletic training programs. CaATe ensures the education program has the correct amount of proficiencies and competencies in eight content areas (Cormier M.L., Zizzi S.J., 2015) to ensure the individuals sitting for the BOC have the basic level of competence to administer the proper healthcare to the patients they will be overseeing. A growing interest has been placed on implementing psychological courses into caATe curriculum. Since ATs play a vital role in sport-injury rehabilitation, researchers suggest that they are best suited to inform, educate, and assist with the psychological along with the physical process of injury (Pearson L., Jones G., 1992; Wiese D.M., Wiese M.R., 1987; Wiese D.M., Wiese M.R., Yukelson D.P., 1991).

Traditional rehabilitation programs are intended to ensure an athlete is fully able to return to preinjury physical fitness levels, but research has begun to highlight the importance of addressing psychological responses to injury and rehabilitation, as well (Stiller-Ostrowski J.L., Hamson-Utley J.J., 2010; Larson G.A., Starkey C., 1996; McDonald S.A., Hardy C.J., 1990). The National Athletic Training Association's (NATA) Executive Committee for Education realized the benefit of providing psychological support to injured athletes and included the Psychological Strategies and Referral (PS) content section in the 5<sup>th</sup> edition of the *Educational Competencies* (NATA, 2011). These competencies were designed so that ATs would be exposed to information and practical learning situations that would increase their ability to administer psychological support and provide a holistic approach to the rehabilitation of an injured athlete. The NATA Executive Committee for Education believed that ATs "would consider the psychological aspects of injury within their scope of practice" (Stiller-Ostrowski J.L., Hamson-Utley J.J., 2010: 5) with the addition of the Psychosocial Intervention and Referral content area

to athletic training education programs (ATEPs); however Stiller-Ostrowski, Gould, and Covassin (2009) stated that there are no specific or standardized guidelines regarding the actual teaching of this information even though it is required content of ATEPs. Even though ATs are aware that injured athletes go through psychological distress (Clement, Granquist, & Arvinen-Barrow, 2013) because of inconsistent training they may lack the confidence and readiness to assist with the psychological aspects of an athletic injury.

Arvinen-Barrow and colleagues (2014) found that athletes have well-defined expectations of their ATs: to give them the necessary tools to move forward. ATs know they have the tools to help with the physical aspect of the rehabilitation process but lack confidence in their abilities to use psychological interventions (Clement, Granquist, & Arvinen-Barrow 2013). This lack of confidence, according to Stiller-Ostrowski and Ostrowski (2009) can be accredited to not feeling adequately prepared by their ATEP's instruction of how to deal with psychological responses. Along with inadequate instruction, ATs perceive themselves as not "fully trained in the implementation" (Kamphoff and colleagues, 2010) of the useful psychological skills. ATs know the importance of psychological interventions for their athletes, but may need a formal course to not only increase confidence in administering interventions, but also to make sure all competencies and proficiencies of PS are addressed.

### **Athletic Trainers Implementing Mental Skills**

Athletic trainers acknowledge the physical and psychological aspects of injury and the importance of incorporating the mind with the physical healing process. Since the birth of the Psychosocial Intervention and Referral competency in ATEPs, research has targeted athletic trainers to get a better understanding of their relationship with mental skills. Stiller-Ostrowski and Ostrowski (2009) investigated the perceptions of recently certified ATs on their



undergraduate ATEP preparation in the PS content area. The researchers chose a mixed-methods design and conducted interviews with focus groups from two Division I institutions. With regards to sport psychology in the athletic training room, students reported they could not recall learning about stress-response models to explain psychological and emotional response to injury. In the sports psychology courses taken by ATS the topics of stress management, relaxation, visualization, and imagery were covered at very superficial level. The one technique used regularly by ATS was breathing control (i.e. centering) in the initial injury evaluation to get the athlete to relax while performing special tests. The study found, in terms of dealing with injured athletes, ATs feel underprepared to provide mental skills training after graduating from a caATe accredited program that requires competency in PS. After results of the study were discussed Stiller-Ostrowski, Gould, and Covassin (2009) created educational intervention in psychology for ATS in attempt to increase knowledge and confidence in the PS competency. The researchers designed a 6-week intervention that mirrored how a course might be implemented in a typical ATEP in order to fulfil the requirements of the PS competency. There were 2-hour class room session once a week for 3 weeks followed by 30-minute seminar sessions once a week for 3 weeks; classroom sessions had a combination of lectures, active student participation, and student interaction activities. The seminar sessions were designed to enable students to consult with the instructor, share experiences implementing techniques with athletes, learn from others' experiences, and to receive feedback. To measure the growth of knowledge and if ATS were using the new skills taught, a 28-item knowledge test (KT) and a 34-item Likert scale (6 subscales) skill usage survey (SUS) were used for instrumentation. Results showed that the intervention successfully increased psychology-of-injury knowledge and skill usage by week 3 and continued to improve through week 6. The study also showed that retention testing indicated

students continued using the skills with their athletes long after the module was over week 7 and 14 scored demonstrated a high percentage of retained usage. Both studies emphasize the importance of ATEP having a strong PS course so ATS know how to use mental skills training, but negligent the importance of identifying psychological distress within the injury process. Cormier and Zizzi (2015) wanted to assess ATs' skills in identifying symptoms, matching strategies with stressors, and making referral decisions. The questions the researched studied were (1) are ATs able to correctly identify psychological symptoms in athletes and make correct referral decisions based on information presented in case vignettes? (2) are ATs able to correctly match psychological strategies for athletes based on psychological symptoms presented in case vignettes? The researchers used a web-based questionnaire to collect data from members of NATA to participate in a cross-sectional study. Results showed that respondents correctly identified psychological symptoms as presented in the 3 cases and did well with choosing the course of action for the low-level and high-level athletes. However, fewer than half of the ATs chose the appropriate course of action for the patient with moderate symptoms. Since ATs usually encounter athletes with moderate symptoms there is a trend of frequent referrals for athletes with psychological concerns because ATs struggle with choosing appropriate psychological strategies to aid athletes.

The proposed study aims to take a different perspective compared to the studies above. While other studies looked at how competent ATs were delivering PS, that is not the aim of the present study. The goal is to determine which psychological skills AT report using most often. This line of research will allow sport psychology practitioners, and educators to know which topics they should focus on when educating ATs. Since there is little time to cover the depth of PST, and as Stiller-Ostrowski and Ostrowski (2009) found, the PS education is only briefly

discussed, a more focused curriculum could provide advantages for all. Additionally, opening recruitment up to all divisions, levels, and athletic settings, provides a greater depth of understanding, across various domains, outside of just Division I collegiate athletics. A qualitative study of this nature, can go more in depth of what ATs actually retained and are using from SP classes, as well as which PS skills are lacking.

### **Conclusion**

Athletic trainers are continually challenged to build and implement rehabilitation programs that will return their athlete back to play as soon as possible. With the vital role that the athletic trainer plays, it has become pertinent to have the ability to add psychological skills into rehabilitation. Therefore, the importance of the athletic trainer to both understand and use a wide variety of mental skills to improve rehabilitation effectiveness has to be acknowledged. The amount of formal training on psychological intervention and referral should be increased and have specific guidelines to ensure education that is beneficial to the AT and athlete. Further research needs to be conducted to get a better understanding on if (a) athletic trainers are knowledgeable of the psychological signs and symptoms that can occur with conjunction with an injury and (b) which psychological skills, if any, are athletic trainers the most confident with using during rehabilitation with an injured athlete. Knowing this information could be the beginning process of properly building guidelines and standards for the Psychosocial Intervention & Referral competencies of ATEP that produce confident, knowledgeable holistic healthcare practitioners.

## CHAPTER III

### METHODS

The purpose of this study is to determine which mental skills certified athletic trainers use most often, and how confident they feel delivering these skills to injured athletes. Semi-structured interviews will be conducted with currently employed, male and female certified athletic trainers to gauge their level of knowledge, competency, and instruction of mental skills as an additional tool to assist with the rehabilitation of injured athletes. The goal will be to identify specifically: which mental skills are most commonly used, how often they are used in treatment, and the method of delivery in which they are used during applied practice. Grounded Theory will be used to examine the above research questions and explore the perceived experiences of participants. This chapter will discuss in greater detail these components: (a) methodology, (b) participants, and (c) procedures.

#### **Methodology**

The primary theoretical framework used for this qualitative study is grounded theory. Grounded theory involves the progressive identification and integration of categories of meaning from data. Strass and Glaser (1967) advocated developing theories from research grounded in data rather than deducing testable hypotheses like what was being done with the more popular existing theories of quantitative research (Bryant & Charmaz, 2007). Grounded theory was designed to minimize the imposition of the researcher's own categories of meaning upon the data during the research process (Strauss & Corbin 1990, 1998) Using strategies of constant comparative analysis, theoretical sampling and theoretical coding, grounded theory provides an explanatory framework with which to understand the phenomenon under investigation (Strauss & Glaser, 1965, 1967). Unlike most other research methods, grounded theory merges the

processes of data collection and analysis with the aim of theoretical saturation; simply serving to identify the phenomenon wished to be studied at the outset (Wiling, 2013).

The philosophical approach that the research question aims to explore is existentialism. Existentialism is a philosophical approach proposing that individuals engage in their own perceptions of experiences. Thus, an emphasis on the body and on the affective rather than rational side of being a human are seen (Wrathall & Dreyfus, 2007). The methodology of ground theory and the philosophy of existentialism mutually embrace a curiosity and concern with experience in the world of day-to-day human existence. Fundamentally, the grounded theory interview puts emphasis on context, theoretical emergence, and the social construction of realities (Goulding, 1998) and presents existential thought with an effective means to explore and describe human experience (Dale, 1996). The intent of future research is to gain a holistic understanding of the certified athletic training experience, which is suited for the qualitative, flexible approach of grounded theory methodology. For these reasons, participants will be asked to discuss their perceived knowledge and practice of mental skills during in-depth grounded theory interviews.

### **Participants**

The following inclusion criteria has been established in order to participate in the above study. Athletic trainers must have completed a Commission on Accreditation of Athletic Training Education (caATE) accredited program and be certified through the Board of Certification (BOC). The participants will range in varying levels of applied and academic experience (BS-PhD degree, Secondary schools -professional setting). Participants will be limited to those who have been certified through the BOC during or after 2009, have 3 years of previous experience, are currently practicing as an athletic trainer in a qualified athletic setting (DI, DII, DIII, NAIA,

Professional) and are willing to talk about their lived experiences. To ensure participants match the above-mentioned inclusion criteria, interested parties will be asked to complete a screening questionnaire. pre-interview demographics questionnaire (PDQ) (Appendix E). Attached to the questionnaire will be the consent form for participants to sign before completing the questionnaire and any data collected. The demographic questionnaire will collect information such as, age, gender, current degree, education, year of certification, years of practice, sport psychology course title(s), current practice setting, access to a sport psychology consultant, ethnicity, and country of origin. The sample of participants will include up to 40 BOC certified athletic trainers, or until full saturation of a thematic scheme is developed, employed at the collegiate or professional level. Recruitment will take place either by verbal interaction or a request via email distribution to the members of the National Athletic Training Association (NATA), NATA Survey, the sportpsych listserv, and NATA Digest Den (see Appendix C). Interested parties will be instructed to reach out via email to get more information about the study and via email be sent the PDQ with consent form attached. On the last page of the PDQ interested parties will be instructed to enter their email address so once the researchers have reviewed their criteria they can be notified on their standing. If the interested party meets the inclusion criteria, they will be sent a follow-up emailing asking for an interview that works best with their schedule. If an interested party does not meet criteria, they will be sent an email stating they were not selected for the study, but still thanking them for their interest.

### **Procedures**

Prior to beginning research, Institutional Review Board approval will be acquired through Barry University. The procedures used in this study will be based on recommendations of conducting ground theory research specified by Strauss and Corbin (1998). These include

exploring researcher bias, selection of co-participants, data collection, data analysis, and developing/confirming thematic structure. Each stage is explained in the following sections.

**Selection of Co-Participants.** The role of the interviewer is to assist in the participant's recollection of their given experience and in-depth accounts, as they are experts on the subject having direct experience of the phenomenon (Dale, 1996). The researcher will also collaborate with the participant throughout the study to guarantee the understanding and development of themes (Creswell, 2007), as such active involvement and effort is why the participants are identified as co-participants, or co-researchers. Once approval from Barry University's Institutional Review Board is obtained, the researcher will contact colleagues, peers, universities and professional organizations in the United States via email, social media, and phone calls. Participants will be identified via personal connections, internet search, the National Athletic Training Association (NATA) Directory, NATA Survey, the sportpsychlistserv, and NATA Digest Den. These populations best capture those whom may have access to settings that fulfill inclusion criteria for the present study. The researcher will be using criterion (i.e., inclusion of participants that fit the identified delimitations for the study) as well as snowball sampling (i.e., identifying respondents who are then used to refer researchers on to other respondents; Berg, 1988) procedures.

A recruitment email sent to potential participants will include a description of the purpose, procedures, and requirements of co-participation. Certified athletic trainers who express interest will be instructed to contact the principal researcher to be sent an online link through Qualtrics to gather informed consent and complete a Pre-interview Demographic Questionnaire (PDQ). Informed consents will be kept separate from any identifying information of the participant in order to preserve anonymity. They will be kept in a locked filing cabinet or

password protected folder on the primary investigators computer, ensuring confidentiality. Once the demographic questionnaire is completed, and if inclusion criteria is met, participants will be contacted again and asked for their voluntary participation in interviews projected to last no longer than an hour. Interviews will be coordinated with participants either in-person or through phone/Skype (Appendix D). Participants will be made aware that they can stop the interview, or back out of the study at any time without negative consequences.

**Data collection.** In order to highlight any biases of the researcher and reduce the implications of these for the interviews, a bracketing interview will be conducted by one of the researcher's committee members prior to the start of data collection. A transcript of the bracketed interview will be prepared and analyzed to enable the researcher to become self-aware of any biases and opinions that could affect the interviews and interpretive processes.

Once participants have been selected, based on their PDQ, an interview will be set-up. During the interview they will be asked about their knowledge and delivery of mental skills. At the start of each interview the participant will be given a pseudonym to protect identity during the investigation. Only pseudonyms will be used to discuss the results of the study and highlight specific parts of the certified athletic trainers' interviews. The participants will be asked to respond to the following open-ended questions: "How confident do you feel delivering mental skills? When you think about your education experience, what mental skills were introduced to you, in sport psychology classes? Which, if any, of those skills do you use with your injured athletes? How often do you use those mental skills with the injured athletes? How do you instruct your athletes on how to use those skills? When do you suggest the athlete use those mental skills? Is there a mental skill you use more often than others? How do you perceive the athletes take your advice/instruction of mental skills? What are some common psychological



signs and symptoms an athlete may show because of their injured status? How often do you refer out to a sport psychology consultant?" Follow-up questions will be used to clear up uncertainties and ask for elaboration, purposely worded for the participant's understanding when possible. To ensure that nothing is overlooked, a concluding question in all interviews will be asked to determine whether the participant has any more they want to share in regard to their experience.

Interviews via phone will be conducted to allow for a broader range of participants across the United States. Regardless of the form of interview, the open ended and follow-up questions will remain rather consistent across interviews. Interviews are expected to take approximately 30 to 60 minutes, bringing total time of participation up to 90 minutes. Interviews will be conducted, and data collected until the researcher has up to 40 qualified participants or until saturation is reached. All interviews will be digitally audio recorded and transcribed verbatim; once they are transcribed, the audio recordings will be properly discarded.

In-person interviews will be conducted in a private research office on campus (i.e., a reserved private classroom or room in the library, or private conference space in the Sport, Exercise, and Performance Psychology offices). Privacy will be determined by scheduling access to the room as assurance that no other individuals will attempt to use the space at the same time. Phone and Skype interviews will be conducted via private home office. Actions will be taken (e.g. pre-scheduled use of office, explanation of confidentiality to surrounding parties, and locked door for confirmation of no entry) to ensure that no other individual enters the office during the allotted interview time.

**Data analysis.** Interview data will consist of the interviews previously transcribed verbatim by the researcher and will become the focus of the research process. Chenitz and Swanson (1986) stated that grounded theory interviews have a general guide which seeks to

cover the theme which is to be developed in depth; this approach is considered the best means of securing the personal and private concerns of respondents. Prior to the start of the data analysis process, participants will be emailed a copy of their transcripts in order to express their satisfaction that the transcripts provide accurate interpretations of their motivational experiences as well as add in any further information, if any, they would like to include. Then, the principle researcher and the board members will review the interview transcripts in order to begin the process of data analysis.

The analysis will be centered on the development of meaning units, which are described by Creswell (2013) as significant statements that are grouped into larger units of information. Meaning units will then form the foundation of themes and sub-themes that describe the language of the participant and their experiences with mental skills. The thematic structure will be developed, evaluated, and modified several times until the primary researcher and interpretive group members have reached agreement.

**Developing/confirming thematic structure.** Triangulation will be used to verify the thematic structure. Crucial to the procedures of data analysis, the final step will involve the demonstration of the thematic structure to co-participants to confirm whether the analysis accurately portrays their personal experience with the phenomenon (Thomas & Pollio, 2002). The co-participants are to supply the researcher with feedback regarding their experience as a means to discuss a personal experience with another individual who is just as interested in the given experience (Thomas & Pollio, 2002). This step will be important for validity purposes, acknowledging that without the confirmation by co-participants of accurate descriptions of their experience, only one person can ensure that the analysis is adequate (Dale, 1996). For a phenomenological study to be understood as valid, it must have both effortful and appropriate

methods to produce a first-person narrative of the phenomenon (Pollio et al., 2006). If the correctness of meaning is confirmed by the co-participants, criterion for reliability in qualitative research will be satisfied (Janesick, 1998). In qualitative research, reliability does not look to have replication of exact accounts, but rather, expects that meanings will create overlapping themes (Thomas & Pollio, 2002).

## CHAPTER IV

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**CHAPTER V****MANUSCRIPT**

Sports play a vital role in modern society and are an integral part of life essential for the mental and physical well-being of individuals (Craig & Beedie, 2008). Common benefits of participating in sports include improving health and fitness levels, positive social interaction, increased self-confidence, and having an outlet for stressors (Hausenblas & Rhodes, 2016). While sport activities are a source of great satisfaction and benefit, they can become a source of pain and despair due to injury. As rates of participation continue to increase in sports, so has the rate of sport injury (U.S. Centers for Disease Control). Sport injury is often a traumatic event where emotional and psychological reactions are negative. Each injury experience is unique and influenced by an array of situational and personal biopsychosocial factors that interact, before, during and after the injury occurrence.

Sports medicine professionals (SMPs) have been the forefront option to assist an athlete that has sustained an injury. SMPs have a wide knowledge of injuries and have the skills to heal physical damage of an injury and get an athlete back into physical shape to return to participation. However, SMPs may still be lacking the necessary tools to assist with the psychological damage an injury can leave with an athlete. SMPs understand an injury can cause psychological damage and the importance of a holistic approach when assisting an injured athlete yet may not have formal education to effectively assist an injured athlete.

The present study looked to investigate the relationship between athletic trainers and their use of psychological interventions within their practice. The Psychosocial Intervention and Referral (PS) competency was established in the athletic training curriculum in 2009, but there has yet to be formal educational guidelines on how PS should be taught to benefit both athletic

trainers and the populations they oversee. To begin discussion of setting PS guidelines, emphasis should be placed on understanding how current athletic trainers are taught PS skill(s) knowledge, which skill(s) are implemented during practice, and how the skill(s) are being instructed to athletes. Understanding those techniques will give some insight on what areas of the PS competency need to be addressed to make more confident, holistic healthcare practitioners.

The purpose of this study was to help benefit current athletic training programs, so they can know how to address specific areas lacking in their current curriculum. The study benefits the future direction of athletic training programs. It is important to have guidelines in place to ensure athletic training students are proficient and give holistic health care to their patients. This study aims to benefit instructors, preceptors, athletic training students, and medical personnel by helping to understand and identify how signs and symptoms of injured athletes are being recognized and what methods athletic trainers have used, with success, in treating those signs and symptoms.

### *Injury In Sport*

Frequent involvement in sports places participants under intense physical and psychological pressure and stress; that intense stress magnifies the likelihood of an injury occurring. Although athletes do not plan to get injured and attempt to avoid the entire experience, virtually all athletes will sustain an injury in their career that can temporarily (or permanently) hinder sport participation (Taylor and Taylor, 1997). Most injured athletes have the potential for full recovery to get back to, at least, pre-injury performance levels yet fail due to the psychological factors that accompany an injury (Taylor and Taylor, 1997).

### *Psychological Impact of Injury*

Physical damage and restrictions of injury are typically visible, but an injury can have an effect that is beyond physical ailment. The risk of injury, being injured, rehabilitation demands, and career ending injuries can result in psychological distress in an athletic individual (Feltz, D.L., 1986; Team Physician Consensus Statement, 2006). There are many signs and symptoms of psychological distress; Anderson and Parr (2013) state some of the commonly seen instances are social withdrawal, emotional outbursts, excessive worry, changes in sleep pattern, changes in appetite, denial of injury, signs and symptoms of depression and anxiety, lack of motivation, poor judgement, change in mood, and suicidal thoughts. A majority of these symptoms can be seen in injured athletes during any point of the injury process and can undermine an individual's ability to self-regulate future behavior (Bandura, 1997).

### *Mental Skills Training*

For decades, the focal point of mental skills has been to enhance athletic performance while competing in sport (Mack & Ragan 2009), but there has been a shift and researchers have begun to outline the importance of considering how mental skills can aid within the injury process (Cormier & Zizzi, 2015). Mastering mental skills enhances one's ability to stand tall in the face of adversity and to rebound from setbacks and failures such as injury. Research has explored the benefits and outlines how mental skills can assist an athlete in injury prevention, injury rehabilitation, and return to sport by introducing affective coping mechanisms. The most common mental skills used in athletics are imagery, goal setting, self-talk, and relaxation techniques; these mental skills have all been documented as useful in facilitating, maintaining, and improving athletic performance (Mack & Ragan, 2009).

### *Mental Skills training for injury prevention*

Research still needs to be conducted on how mental skills are used to assist injury prevention, but there is significant research on the importance of understanding psychological factors that may predispose an individual to injury. Andersen and Williams (1988) developed the stress and injury model that explained the psychology underlying the occurrence of sport injuries. The model states an athlete's personality, stress history, and coping resources all influence the cognitive appraisal which can either intensify or alleviate response to stress within an athletic environment. This tool can be utilized in future research to assist with decreasing the risk of injury with mental skills.

#### *Mental Skills training during injury rehabilitation*

Even though injury prevention guidelines are in place, injuries will still occur. After an injury is sustained and diagnosed, a rehabilitation plan can be designed to assist an athlete with returning to sport participation. Mental skills are beginning to be integrated more into rehabilitation protocols and literature has supported their use to aid athletes in recovery (Clement, Granquist, & Arvinen-Barrow 2013). Imagery, positive self-talk, goal setting, and relaxation techniques have been useful in aiding athletes cope with stress, anxiety, and pain as well as addressing self-efficacy, self-esteem, and confidence-related apprehensions (Ievleva, L. and Orlick, T, 1991; Beneka, A., Malliou, P., Bebetos, E., Gioftsidou, A., Godolias, G. 2007). Clement, Arvinen-Barrow, and Fetty (2015) also state how mental skills can also help with rehabilitation adherence and motivation concerns.

#### *Mental Skills training for return to sport*

To date there has been no research on adherence to mental skills once an athlete has been fully cleared to return to sport participation. Research does support the notion that mental skills can be transitioned so future research should look at the best way for healthcare practitioners to

teach athletes how mental skills can be utilized in return to sport to decrease anxieties and help prevent further injuries.

### *Psychological Competencies of Athletic Trainers*

The medical personnel that will have the most consistent interaction with an injured athlete is a certified athletic trainer (ATC). ATCs are healthcare professionals that specialize in preventing, assessing, managing and rehabilitating injuries (Anderson & Parr, 2013). Though ATCs work with other allied healthcare specialists, usually, after the confirmed diagnosis and any major procedure [if needed] is complete, the ATC oversees the daily rehabilitation of the injured athlete, which highlights the need to develop competence in the psychosocial aspects of injury rehabilitation.

To become eligible for the athletic training certification, (NATABOC, 2018) two conditions must be completed: graduate from a program that is accredited by the Commission on Accreditation of Athletic Training Education (caATE) and pass the Board of Certification (BOC) exam. The purpose of caATE (2017) is to develop, maintain, and promote appropriate minimum education standards of quality for athletic training programs. caATE ensures that individuals in an education program, sitting for the BOC, have the basic level of competence to administer the proper healthcare to the patients they will be overseeing. A growing interest has been placed on implementing specific psychological courses into caATE curriculum since ATCs play a vital role within sport-injury rehabilitation. Because of this, the National Athletic Training Association's (NATA) Executive Committee for Education added the Psychological Strategies and Referral (PS) content section in the 5<sup>th</sup> edition of the *Educational Competencies* (NATA, 2011). These competencies were designed so that athletic training students (ATS) would be exposed to information and practical learning situations that would increase their ability to administer



psychological support. However, Stiller-Ostrowski, Gould, and Covassin (2009) stated that there are no specific or standardized guidelines regarding the actual teaching of this information even though it is required content of athletic training education programs (ATEPs). Even though ATS are aware that injured athletes go through psychological distress (Clement, Granquist, & Arvinen-Barrow, 2013), because of inconsistent and inadequate training from ATEPs (Stiller-Ostrowski and Ostrowski, 2009), ATCs still lack the confidence and readiness to assist with the psychological aspects of an athletic injury. ATS may need a formal course to not only increase confidence in administering interventions, but also to make sure all competencies and proficiencies of PS are addressed.

#### *Athletic Trainers Implementing Mental Skills*

Since the birth of the PS competency in ATEPs, research has targeted athletic trainers to get a better understanding of their relationship with mental skills. Stiller-Ostrowski and Ostrowski (2009) investigated the perceptions of recently certified ATCs on their undergraduate ATEP preparation in the PS content area. The study found, in terms of dealing with injured athletes, ATs feel underprepared to provide mental skills training after graduating from a CaATE accredited program that requires competency in PS. After results of the study were discussed Stiller-Ostrowski, Gould, and Covassin (2009) created an educational intervention in psychology for ATS in attempt to increase knowledge and confidence in the PS competency. Results showed that the intervention successfully increased psychology-of-injury knowledge and skill usage. The study also showed that retention testing indicated students continued using the skills with their athletes long after the module was over. Both studies emphasize the importance of ATEP having a strong PS course so ATS know how to use mental skills training, but negligent the importance of identifying psychological distress within the injury process. Cormier and Zizzi (2015) wanted

to assess ATs' skills in identifying symptoms, matching strategies with stressors, and making referral decisions. The questions the researchers studied were (1) are ATs able to correctly identify psychological symptoms in athletes and make correct referral decisions based on information presented in case vignettes? (2) are ATs able to correctly match psychological strategies for athletes based on psychological symptoms presented in case vignettes. Results showed that respondents correctly identified psychological symptoms as presented in the three cases and did well with choosing the course of action for the low-level and high-level athletes. However, fewer than half of the ATCs chose the appropriate course of action for the patient with moderate symptoms. Since ATs usually encounter athletes with moderate symptoms, there is a trend of frequent referrals for athletes with psychological concerns because ATs struggle with choosing appropriate psychological strategies to aid athletes.

The proposed study aims to take a different perspective compared to the studies above. While other studies looked at how confident ATs were delivering PS, that is not the aim of the present study. The goal was to determine which psychological skills AT report using most often. This line of research will allow sport psychology practitioners, and educators to know which topics they should focus on when educating ATS in the classroom. Since there is little time to cover the depth of PST, and as Stiller-Ostrowski and Ostrowski (2009) found, the PS education is only briefly discussed, a more focused curriculum could provide advantages for all. Additionally, opening recruitment up to all divisions, levels, and athletic settings, provides a greater depth of understanding, across various domains, outside of just Division I collegiate athletics. A qualitative study of this nature, goes more in depth of what ATs actually retained and are using, as well as which PS skills are lacking.

*Conclusion*

Athletic trainers are continually challenged to build and implement rehabilitation programs that will successfully return an athlete back to participation. With the vital role that athletic trainers play, it has become pertinent to have the ability to add psychological skills into rehabilitation. Therefore, the importance of the athletic trainer to both understand and use a wide variety of mental skills to improve rehabilitation effectiveness has to be acknowledged. The amount of formal training on psychological intervention and referral should be increased and have specific guidelines to ensure education that is beneficial to the AT and athlete. The following research was conducted to get a better understanding on whether (a) athletic trainers are knowledgeable of the psychological signs and symptoms that can occur with conjunction with an injury and (b) which psychological skills, if any, are athletic trainers most confident with using during rehabilitation with an injured athlete. Knowing this information in the beginning of properly building guidelines and standards for the PS competency of ATEP that should produce confident, knowledgeable holistic healthcare practitioners.

## **METHODS**

The purpose of this study was to determine which mental skills certified athletic trainers use most often, and how ATs instruct these skills. Semi-structured interviews were conducted with certified athletic trainers to gauge their level of knowledge, competency, and instruction of mental skills as an additional tool to assist with the rehabilitation of injured athletes. The goal was to identify specifically: which mental skills are most commonly used, how often they are used in treatment, and the method of delivery in which they are used during applied practice. The purpose of the study is to be able to better inform educators on which mental skills should be taught to up and coming ATs. Grounded Theory was used to examine the above research questions and explore the perceived experiences of participants.

### *Methodology*

The primary theoretical framework used for this qualitative study was grounded theory. Grounded theory involves the progressive identification and integration of categories of meaning from data. Unlike most other research methods, grounded theory merges the processes of data collection and analysis with the aim of theoretical saturation; simply serving to identify the phenomenon wished to be studied at the outset (Wiling, 2013).

The intent of future research is to gain a holistic understanding of the certified athletic training experience, which is suited for the qualitative, flexible approach of grounded theory methodology. For these reasons, participants will be asked to discuss their perceived knowledge and practice of mental skills during in-depth grounded theory interviews.

### *Participants*

Participants were limited to those who have been certified through the BOC during or after 2009, have 3 years of previous experience, are currently practicing as an athletic trainer in a qualified athletic setting, and were willing to talk about their lived experiences. The sample of participants included five female certified athletic trainers with an average of 7 years' experience in athletic training in various settings. Recruitment took place by either verbal interaction or a request via email distribution. Interested parties were instructed to click on a provided link taking them directly to the consent form with screening questionnaire, pre-interview demographics questionnaire (PDQ), and email address request attached. If the participant passed the screening questionnaire, they continued on to the PDQ. If the interested party did pass the screening questionnaire the survey ended, and no more data was collected. On the last page of the PDQ the participants were instructed to enter their email address so the principle researcher could contact them to set up an interview. After the email list was gathered, participants were sent a follow-up

email asking for an interview time that worked best with their schedule.

### *Procedures*

Prior to beginning research, Institutional Review Board approval was acquired through Barry University. The procedures used were based on recommendations of conducting ground theory research specified by Strauss and Corbin (1998). These include exploring researcher bias, selection of co-participants, data collection, data analysis, and developing/confirming thematic structure.

**Selection of Co-Participants.** Once approval from Barry University's Institutional Review Board was obtained the researcher used criterion (i.e., inclusion of participants that fit the identified delimitations for the study) as well as snowball sampling (i.e., identifying respondents who are then used to refer researchers on to other respondents; Berg, 1988) procedures.

A recruitment email sent to potential participants included a description of the purpose, procedures, and requirements of co-participation. Certified athletic trainers who passed the screening process and submitted their PDQ were contacted and asked for their voluntary participation in an interview that lasted no longer than an hour. Interviews were coordinated with participants through phone. Participants were made aware that they could stop the interview, or back out of the study at any time without negative consequences.

**Data collection.** During the interview, participants were asked about their knowledge and delivery of mental skills. The participants responded to open-ended questions. Follow-up questions were used to clear up uncertainties and ask for elaboration, purposely worded for the participant's understanding when possible. To ensure that nothing was overlooked, a concluding question in all interviews was asked to determine whether the participant had any more they

wanted to share regarding their experience. All interviews were digitally audio recorded and transcribed verbatim; once they were transcribed, the audio recordings were properly discarded.

**Data analysis.** The analysis was centered on the development of meaning units, which are described by Creswell (2013) as significant statements that are grouped into larger units of information. Meaning units formed the foundation of themes and sub-themes that describe the language of the participant and their experiences with mental skills. The thematic structure was developed, evaluated, and modified several times until the primary researcher and interpretive group members reached agreement.

**Developing/confirming thematic structure.** Triangulation was used to verify the thematic structure. This step was important for validity purposes, acknowledging that without the confirmation by co-participants of accurate descriptions of their experience, only one person can ensure that the analysis is adequate (Dale, 1996). If the correctness of meaning is confirmed by the co-participants, criterion for reliability in qualitative research will be satisfied (Janesick, 1998).

### *Results*

This study explored how Certified Athletic Trainers (ATCs) utilized mental skills with injured athletes. There is a void in previous research and literature explaining this knowledge, which has compelled a great deal of interest in investigating the ATC perspective on the use of mental skills paired with athletic training. Studying what ATCs' experiences and use of psychological knowledge has revealed common themes in the importance of teaching mental skills in athletic training curriculum. While other studies have looked at ATCs use of mental skills (Cormier & Zizzi, 2015; Stiller-Ostrowski, Gould, & Covassin, 2009) none have taken a complete qualitative approach to gain a depth of understanding. Therefore, a qualitative

framework was implemented in this study. Methods common to grounded theory research guided data collection and analysis. To study how ATC utilized psychological skills in their practice, the research framework was established around two primary questions:

1. Do athletic trainers know the common psychological signs and symptoms that can occur in injured athletes?
2. Do ATC know how to use psychological skills to effectively assist injured athletes?

The following presents findings from interviewing sample ATCs ( $n=5$ ) from three athletic settings (NCAA I  $n = 2$ , NCAA II  $n = 2$ , JUCO  $n = 1$ ). The interview protocol provided a platform for in-depth depiction of how ATC define and utilize psychological skills. Careful analysis of the interview transcriptions allowed the primary researcher to identify meanings and patterns, create the state for a theme emersion (Smith, Larkin, & Flowers, 2009). After reading each transcription multiple times, the primary researcher entered grounded theory reduction by delineating units of meaning. This was accomplished by noting patterns in the way ATC participants described their experience. The primary researcher then clustered the meaning units to support the formation of the following major themes (Acquisition of Knowledge, Feeling States, and Mental Skills) and sub themes (experiential, implicit, explicit, isolation, frustration, genuine conversation, gender differences, and utilization).

### *Summary of Participants*

The results of this grounded theory study were developed through data collected from five separate interviews of ATCs. Table 1 outlines the participant demographic data pertaining to athletic training from the PDQs. Inclusion criteria for participant required, participants who have been certified through the BOC during or after 2009, have 3 years of previous experience are

currently practicing as an athletic trainer in a qualified athletic setting, and were willing to talk about their lived experiences. For the purposes of this study, a qualified athletic setting included Professional sport, NCAA Division I, NCAA Division II, NCAA Division III, NAIA, and Junior Colleges since these settings are specifically for the athletic population.

<b>Variable</b>	<b><i>n</i></b>
<b>Age</b>	
24	1
28	1
29	1
30	2
<b>Gender</b>	
Female	5
Male	0
<b>Position</b>	
Assistant Athletic Trainer	4
Sports Medicine Associate	1
Professor	
Athletic Trainer	1
<b>Practice Setting</b>	
NCAA I	2
NCAA II	2
Junior College	1
<b>Year Certified</b>	
2010	1
2012	3
2016	1
<b>Degree Obtained in AT</b>	
Bachelors	5
<b>Education Level</b>	
Masters	4
Masters in Progress	1
<b>Years with AT Experience</b>	
5	2
7	1
8	1
10	1

*Table 1. Participant Demographic Data*

The sample of five females with certification ranging from 2010 - 2016 proved to be an acceptable pilot for understanding the ATC's experience. Interviews with the participants were



conducted via phone. Four of the participants hold the position of assistant athletic trainer, one is a Sports Medicine Associate Professor along with being an athletic trainer. One participant is in the process of completing their Master’s degree while the other four already have theirs completed. The sample of participants was well represented with ATCs coming from three different athletic settings.

*Process of Analysis*

A thematic structure was developed through qualitative analysis of the transcribed interviews. Meaning units were identified, which are a word, or group of words that differ in potential meaning in comparison to other units (Thomas & Polio, 2002). The meaning units were further classified into four general themes and eleven subthemes, to portray the experiences of the participants. Although the themes are discussed in isolation, it is important to recognize the co-existing nature in order to comprehend the full experience of the athlete. Table 2 details the thematic structure of the general themes and sub-themes, as well as sample quotes to validate how the themes were produced via the participant’s responses.

General Themes	Sub-Themes	Sample Quotes
Knowledge Acquisition	Experiential	Had an internship where we followed a sport psychologist. Picked up on things over time from what I experienced.
	Implicit	My mother was a sociology professor.
	Explicit	Had a general education class freshman or sophomore year. Don’t think I had any formal classes.
Feeling States	Isolation	Become really withdrawn.

Athlete Perception	Frustration	<p>What is my purpose now?</p> <p>Really aggressive towards rehab.</p> <p>Carry themselves in an aggressive way.</p> <p>Everyone else you can't control.</p>
	Difference in Personality	<p>Engaging in risky behaviors.</p> <p>Fighting with significant other and teammates.</p>
	Gender	<p>Girls seem to hear you.</p> <p>More willing to say I hadn't thought of that.</p> <p>Guys are less likely to ask for help.</p>
	Past Experiences	<p>They don't take it seriously the first time around.</p> <p>If they've dealt with it before they are more willing to try it out.</p>
	Social Acceptance	<p>Generally, more accepting.</p> <p>De-stigmatization in media and society.</p>
Psychological Skill Utilization	Conversation	<p>Most important thing is to have genuine conversation.</p> <p>Tried to make my athletic training room a place where people feel comfortable talking.</p>
	Referral	<p>Have no problem knowing my limits.</p> <p>Use Headspace.</p> <p>Subtly refer them to an athlete that had a similar injury.</p>

*Table 2. General and Sub-Themes of participant's experience psychological skills and Sample Quotes from Semi-structured Interviews.*

## DISCUSSION

The following outlines major themes, provided connection to previous literature, discusses the limitations and practical implication, suggests future directions for research and proved concluding remarks.

### *Theme one: Acquisition of Knowledge*

Acquisition of knowledge refers to the method of learning the participants utilized to obtain their mental skills knowledge. This theme relates to how ATCs described the ways they learned about psychological skills and how they use that knowledge in the athletic training setting. Three different subthemes of acquisition were discussed throughout this study: experiential, implicit, and explicit. Experiential knowledge was gained through practical experience such as a clinical rotation or internship. Implicit knowledge was gained through incidental activities, or without awareness that learning is occurring such as having an active parent, that is a professional of the social sciences. Explicit knowledge was generally gained in a classroom setting. Two participants stated that while going through school they:

“Got to shadow sport psychologists who were treating athletes” and “we would discuss what is going on in our clinical sites and talked about how the AT we were working with, as a preceptor was handling the situation. People would share their opinions whether they thought that was good, bad, or what they could do differently.”

Based on AT literature, this relates because athletic training students and preceptors have described clinical education experiences as critical to the development of competent professionals (Benes, Mazerolle & Bowman, 2014). Participants recognize these specific

experiences stood out and assisted with gaining important psychological knowledge. Another participant reflected on her upbringing and the influence on her practice:

“My mother is a socially professor, so I learned a lot about human interaction from my mother and get a lot of my thought processes from her.”

These two methods gave the ATCs a good start and insight, but still may lack the foundational knowledge that a traditional classroom setting teaches. When asked about classroom specific experience participants stated:

“Well we had to take a general psychology class and that was a semester long. I had to do that my freshman year before being accepted into our athletic training program”, “It was a GenEd class that talked about psychology in general, it was not a sports-based class and to be completely honest it was probably my freshman or sophomore year”,

Though under caATE accreditation, athletic training programs are supposed to implement a PS competent curriculum, it does not seem like that standard has been established, specifically at the bachelor’s level. Seems experiential knowledge, gained from internship and clinical rotations, are the main source where psychological skills are learned and retained.

### *Theme two: Feeling States*

Feeling-state refers to the entire psycho-physiological arousal of the body and its connection with a specific behavior. There are both positive and negative feelings that a person may express based on an event that has happened. Participants described the change of feeling states in injured athletes they worked with and had three major reoccurring, negative states commonly seen in athletes. Isolation was the first symptom that all 5 participants acknowledged recognizing in injured athletes. One stating:

“The one I see most is definitely isolation.”

Another participant stated that:

“They become really withdrawn. Even in the athletic training room and even in the team setting.”

This may be due to the loss of identification an athlete may feel because of their injured status (Jill, 2003). This is supported by one ATC who noted that she could tell her athlete:

“was struggling with seeing her people on the field and not being able to be active with them, but still having to be on the field anyway.”

Another symptom ATCs claimed athletes exhibit is frustration that is shown through aggression. Green and Weinberg (2001) suggest that frustration can manifest because the injured athlete currently does not have an active outlet for the emotions they feel. ATCs describe different ways athletes act with aggression:

“They show a lot of aggressive, not towards me, but with themselves and how they present walking around,” “They show aggression towards their rehab,” “They show aggression and hostility towards their significant others and even their teammates.”

Aggression is not the only behavioral change ATCs see with injured athletes. Two of the participants touched on how an athlete’s personality completely changed after an injury diagnosis:

“I’ve had athletes that are usually very by the book and they get injured and know they’ll be out for a while and just go crazy and wild” and “start engaging in risky behaviors like drinking, drug use, and unprotected sex.”

This ATC population demonstrates that negative feeling states are easily recognized and are the usually the only symptoms identified in an injured athlete. None of the participants mention any positive feeling states that may accompany injury or the rehabilitation process. This could be due that negative consequences are the main topic around injuries or because the benefits of psychological skills have not been thoroughly discussed.

*Theme Three: Athlete Perception*

Key factors of ATs implementing psychological skills with athletes is based athlete's perception of their instruction (Hamson-Utley et al., 2008) and success rate of treatment. The ATCs discussed how they perceived athlete's attitudes towards mental skills based on gender, past experiences, and social acceptance. There was a clear-cut difference when it came to female and male athletes that ATCs approached with introducing psychological assistance. They described that:

“Girls always seem to hear you” and “In women's sport I see athletes who are more receptive to it.” Whereas one ATC has: “Never felt that way when talking to a male athlete” who are: “Less likely to accept and ask for help.”

This may be due to the ‘tough guy’ role that male athletes are placed under in modern, Western society or because their caretaker is of a different gender.

Though there was variance based on gender when psychological skills were introduced to athletes that sustained injuries, it seemed that the variance was voided if the injured athlete had past experiences regarding mental health. One ATC made the comparison:

“Unless they've dealt with it in the past, I don't think I've had an athlete take it seriously the first time around.”

Which could explain the final subtheme of social acceptance. As mental health awareness grows, and athletes familiarize themselves with its importance, seeking help becomes more normalized.

This normalization has created a shift within athletic populations and ATCs think:

“generally, they [athletes] are more accepting of it. I think that part of it is just talking about mental health in general and having the ‘big names’ behind it helps as well.”

#### *Theme Four: Psychological Skill Utilization*

The final theme that emerged from interviews was how and when ATCs used psychological skills in their practice. ATCs understand they will have a lot of face time with injured athletes and create a safe environment and use genuine conversation to advocate for them. These conversations can lead to a potential opportunity to introduce psychological skills. One participant stated, along with slipping mental health in every now and again, she:

“always tried to make my athletic training room a place where people feel comfortable talking to me and asking questions.”

This is important because athletes that sustain an injury are in a vulnerable state and may be seeking guidance from someone they trust (Yang and colleagues, 2014). Based on this population, ATCs may not be ready to give specific guidance yet and still prefer to refer to outside sources that may be of assistance to the injured athlete. One participant explained how she encourages athletes to use Headspace because:

“you have a ton of options. There are some specifically for injury, recovery, and rehab, so I tell them to try it out.”

Another participant explained how she utilizes other resources for athletes based on their injury:

“It’s my own little personal thing I’ve started doing, but if someone comes up to be with a boney issue, typically like stress fractures, I will always just say, ‘just so you know we have a dietician that is available to work with.’”

Though the participating ATCs had knowledge of psychological skills they were still not implementing the skills in rehabilitation protocols. The participants still seemed more comfortable with referring after a few conversations with an athlete than attempting an intervention on their own. This may be due to ATCs still not being confident in their ability to pick a psychological intervention that may suit an injured athlete after conversations are had.

#### *Connections to Previous Research*

The findings from this study suggest that psychological signs and symptoms of injury have been introduced during program matriculation, but interventions to assist athletes are still lacking. This causes ATCs to not know how to properly implement skills with athletes which leads to prolonging full treatment and over-referring. Of the five participants, only one was able to articulate which psychological skills they use and when the skills were used. This participant was also the only one to earn a master’s degree in Sport Psychology. These results are consistent with previous research examining ATs’ skills in identifying psychological symptoms, selecting appropriate strategies, and making referral decisions for athletes experiencing various degrees of psychological distress (Cormier & Zizzi, 2015). Lack of knowledge on how to implement psychological skills may be due to the instructional method (Hamson-Utley & Stiller-Ostrowski, 2011) which psychological skills are introduced; most competencies that focus on applying



psychological interventions with athletes are instructed through lectures or graded over during discussions. Hamson-Utley & Stiller-Ostrowski (2011) suggest that hands-on instruction and assessment could increase confidence and use of psychological skills.

### *Limitations and Future Directions*

This study has limitations, particularly regarding sample size. Five participants completed the study, which is not a broad representation of practicing ATCs. However, the qualitative approach really allowed for an in depth understanding of each participant's understanding of how mental skills are used during ATC services. Another limitation is when the researcher sought out to obtain participants. Time of the year was not taken into consideration, which made some ATCs have to reschedule the interview or interview while on their way home for the day. This may be due to increased sport participation in the Winter and Spring season compared to Summer and Fall seasons. Furthermore, this study looks only at ATCs currently practicing in sport-specific settings. This is considered a disadvantage because there are no other athletic training settings taken into account. Also, it is important to remember that the data represents only females. Male ATCs make up 44% of the athletic training population, so it is a disadvantage to not gain their experiences.

Future research investigating the relationship between ATCs and psychological skills should continue to be explored with regards to utilization and effectiveness of the skills used with injured and non-injured athletes. Currently literature of this topic is primarily focused on the confidence level of athletic trainers with implementing psychological skills into their applied practice (Cormier & Zizzi, 2015) and more knowledge is still needed on what skills they are learning and where their knowledge is coming from. While this study laid the ground work to answer these questions, it should be replicated on a larger scale with a more diverse population

of ATCs. Future research should also investigate the athlete's perspective to get a better understanding of which psychological skills are beneficial to use during rehabilitation, and how they feel receiving psychological skills training from their ATC as opposed to a sport psychology professional.

Additionally, to date, there has been no research conducted with ATCs using psychological skills as a tool for non-injured athletes. Future research can begin to investigate psychological skills as a tool for injury prevention.

### *Practical Implications*

The results from this study can provide insight and inform Certified Mental Performance Consultants (CMPCs) about what mental skills they should focus on in order to teach ATCs to become more competent and confident practitioners. In addition, collaboration between NATA and the Association for Applied Sport Psychology (AASP) could assist with bridging this gap to create more confidence in administering the psychosocial competency.

Courses on proper goal setting, imagery, and arousal regulation would better equip ATCs with managing frustration and aggression of athletes, which was found to be a major theme as noted by ATCs working with athletes. In addition, social support would be another important topic to cover. Athletes that sustain an injury can become isolated; CMPCs can teach workshops to ATCs about how to best support each athlete and create rehabilitation protocols that allow athletes to remain connected to their team and sport. Textbooks and research from performance psychology that specifically touches on the topic of psychological implications surrounding injury may be best for this explicit knowledge. Researchers in the sport psychology industry should continue to explore literature and create textbooks or guides geared specifically for the

athletic training population. These textbooks would give ATCs a foundation to understanding why certain symptoms seem to be universal and their full effect on the body. Along with the symptoms that may occur with injury, these textbooks would introduce psychological skills that can be applied to decrease the negative symptoms an athlete is experiencing. The textbooks would describe the research behind each intervention, how to implement the intervention, and results to see if the intervention is a good fit for the specific performer.

Along with formal education, clinical rotations and internships should have specific competencies or projects that build off explicit knowledge and have ATS focus on a psychological skill to use based on patient needs. Results from this study show that ATCs gain and remember more from experiential knowledge so ecologically valid psychological opportunities should become standard along with the physical opportunities ATS attain. CMPCs should take part in creating assessment of practicum experiences so AT educators understand why physiological competencies are being demonstrated, and what a high-quality psychological practicum looks like. Just like current physical competencies, the psychological competencies should progress as knowledge and skills progress throughout an athletic training program. These competencies will create a space for deliberate psychological skills practice and should increase confidence and use of skills once ATS become ATCs.

These results can also assist current ATCs; Stiller-Ostrowski, Gould, and Covassin (2009) emphasize the keystone role ATCs play with injured athletes and the recovery process. Current practicing athletic training can use the results to help guide the focus of their continuing education units to improve care of athletes since they have already matriculated through a program. The ways AASP could help with continuing education units would be through conferences and distance professional development courses. Both the NATA and AASP have

national and regional conferences so crossover at either level could benefit. During the NATA National Conference a psychosocial 'track' could be placed into the schedule that brings in sport psychologist and Certified Mental Performance Coaches to cover this topic and give ATCs an expert advice, practical implications, and case studies. Another session in the psychosocial track would be a hands-on work shop teaching ATCs how and when to use certain interventions for their athletes. For distance personal development, NATA and AASP could go back and review or create courses to place online that would fulfill criteria for both organizations to use for continuing education units that will be available for members who are unable to attend conferences. Though these courses will mostly be lecture or video series, a significant benefit is that a member could always go back to the course for a reference.

### *Conclusion*

Certified Athletic trainers are continually challenged to build and implement rehabilitation programs that will successfully return an athlete back to participation. With the vital role that athletic trainers play; it has become pertinent to have the ability to add psychological skills into rehabilitation. Furthermore, ATCs understand, through research and personal practice, how psychological skills can assist athletes in a return protocol. ATCs were also aware and confident of negative feeling stated presented by athletes. However, the knowledge of how and when specific psychological skills could be utilized are still lacking. Since current ATCs state that clinical, hands-on experience is most impactful a case could be made for adding specific PS courses that provide practical experiences to ensure that ATs are capable of navigating applied situations with athletes.

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**APPENDICES**

*Appendix A*

**Barry University  
Research with Human Participants  
Protocol Form**

**PROJECT INFORMATION**

**1. Title of Project**

*Athletic Trainers and Psychosocial Intervention: Which Skills Are Retained and Used Most Often in Practice*

**2. Principal Investigator**

Student Number: 3245419

Name: Jasmine Nicole Oates

School – Department: College of Nursing and Health Sciences – Sport & Exercise Sciences

Mailing Address: 1420 NE Miami Place, Miami FL, 33132

Telephone Number: 615-772-1678

E-Mail Address: jasmine.oates@mymail.barry.edu

*NOTE: You **WILL NOT** receive any notification regarding the status of your proposal unless accurate and complete contact information is provided at the time the proposal is submitted.*

**3. Faculty Sponsor**

Name: Dr. Kimberly Cologgi

School – Department: College of Nursing and Health Sciences – Sport & Exercise Sciences

Mailing Address: 11300 NE 2<sup>nd</sup> Avenue, Miami Shores, FL 33161

Telephone Number: 305-899-4890

E-Mail Address: kcologgi@barry.edu

Faculty Sponsor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**4. Is an IRB Member on your Dissertation Committee? Yes \_\_\_\_\_ No: X\_\_\_\_\_**

**5. Funding Agency or Research Sponsor**

NONE

**6. Proposed Project Dates**

Start: December 1<sup>st</sup>, 2018

End: December 1<sup>st</sup>, 2019



*Please Provide the Information Requested Below*

A. Project activity STATUS is: (Check one of the following three as appropriate.)

**NEW PROJECT**

**PERIODIC REVIEW ON CONTINUING PROJECT**

**PROCEDURAL REVISION TO PREVIOUSLY APPROVED PROJECT**

(Please indicate in the **PROTOCOL** section the way in which the project has been revised.)

B. This project involves the use of an **INVESTIGATIONAL NEW DRUG (IND) OR AN APPROVED DRUG FOR AN UNAPPROVED USE** in or on human participants.

YES  NO

Drug name, IND number and company: \_\_\_\_\_

C. This project involves the use of an **INVESTIGATIONAL MEDICAL DEVICE (IMD)** or an **APPROVED MEDICAL DEVICE FOR AN UNAPPROVED USE.**

YES  NO

D. This project involves the use of **RADIATION** or **RADIOISOTOPES** in or on human participants.

YES  NO

E. This project involves the use of Barry University students as participants. (If any students are minors, please indicate this as well.)

YES Barry Students will be participants (Will minors be included?  YES  NO)

NO Barry Students will participate

F. **HUMAN PARTICIPANTS** from the following population(s) would be involved in this study:

Minors (under age 18)

Fetuses

Abortuses

Pregnant Women

Prisoners

Mentally Retarded

Mentally Disabled

Other institutionalized persons (specify)

Other (specify) Certified, practicing athletic trainers

G. Total Number of Participants to be Studied: 40

*Appendix B***Description of Project****1. Abstract**

Athletic trainers are the primary healthcare provider when an athlete sustains a sport injury. In the past, emphasis has been primarily placed on the physical aspects of sport injury and athletic trainers focused on healing just the injury, not the whole athlete. The athletic training community understands that there are psychological factors to injury has turned to holistic healthcare to help treat athletes. To establish holistic healthcare, the Psychosocial Intervention and Referral component was added to athletic training curriculum to produce more competent athletic trainers. Even though the Psychosocial Intervention and Referral component was added, certified athletic trainers may still lack confidence in implementing psychosocial skills to their athletes.

Athletic training education programs will be offered exclusively at the master's level beginning in the 2020 academic year, it is important to have a Psychosocial Intervention and Referral education policy in place to optimize the skills in the shorten amount of educational time. In order to begin building a policy there needs to be an understanding of the confidence levels of practicing athletic trainers, what skills are being used, and how those skills are being used. Knowing these elements can help athletic training curriculums know what has worked and where gaps may need to be filled

**2. Recruitment Procedures**

The following inclusion criteria has been established in order to participate in the above study. Athletic trainers must have completed a Commission on Accreditation of Athletic Training Education (caATe) accredited program and be certified through the Board of Certification (BOC). The participants will range in varying levels of applied and academic experience (BS-PhD degree, Secondary schools -professional setting). Participants will be limited to those who have been certified through the BOC during or after 2009, have at least 3 years of experience, are currently practicing as an athletic trainer in a qualified athletic setting (DI, DII, DIII, NAIA, Professional) and are willing to talk about their lived experiences. To ensure participants match the above-mentioned inclusion criteria, interested parties will be asked to complete a screening questionnaire (Appendix E). Attached to the questionnaire will be the consent form for participants to sign before completing the questionnaire and any data is collected. If the participant meets the criteria of the study, they will then continue on to the pre-interview demographics questionnaire (PDQ). The demographic questionnaire will collect information such as, age, gender, current degree, education, year of certification, years of practice, sport psychology course title(s), current practice setting, access to a sport psychology consultant, ethnicity, and country of origin. If the interested party does not meet the required criteria the survey will end and no more data will be collected. The sample of participants will include up to 40 BOC certified athletic trainers, or until full saturation of a thematic scheme is developed, employed at the collegiate or professional level. Recruitment will take place either by verbal interaction or a request via email distribution to the members of the National Athletic Training Association (NATA), NATA Survey, sportpsychlistserv, and NATA DigestDen (see Appendix C). The email distribution will contain a summarization of the proposed study, inclusion criteria, and the information that will be gathered in the PDQ. Interested parties will be instructed to click on a provided link that takes them directly to the consent form with screening questionnaire,

PDQ, and email address request attached. Interested participants will be instructed to reach out to the primary researcher via email to get more information or if they have questions about the study. On the last page of the PDQ the interested parties will be instructed to enter their email address so the principle researcher can contact them to set up an interview. The email addresses will be compiled in random order so researchers will not be able to identify email addresses to survey responses. After the email list is gathered, participants will be sent a follow-up email asking for an interview time that works best with their schedule.

### 3. Methods

Once participants have passed the screening process and submitted their PDQ, an interview will be set-up. During the interview they will be asked about their knowledge and delivery of mental skills. At the start of each interview the participant will be given a pseudonym to protect identity during the investigation. Only pseudonyms will be used to discuss the results of the study and highlight specific parts of the certified athletic trainers' interviews. The participants will be asked to respond to the following open-ended questions: "How confident do you feel delivering mental skills? When you think about your education experience, what mental skills were introduced to you, in sport psychology classes? Which, if any, of those skills do you use with your injured athletes? How often do you use those mental skills with the injured athletes? How do you instruct your athletes on how to use those skills? When do you suggest the athlete use those mental skills? Is there a mental skill you use more often than others? How do you perceive the athletes take your advice/instruction of mental skills? What are some common psychological signs and symptoms an athlete may show because of their injured status? How often do you refer out to a sport psychology consultant?" Follow-up questions will be used to clear up uncertainties and ask for elaboration, purposely worded for the participant's understanding when possible. To ensure that nothing is overlooked, a concluding question in all interviews will be asked to determine whether the participant has any more they want to share in regards to their experience.

Interviews via phone will be conducted to allow for a broader range of participants across the United States. Regardless of the form of interview, the open ended and follow-up questions will remain rather consistent across interviews. Interviews are expected to take approximately 30 to 60 minutes, bringing total time of participation up to 90 minutes. Interviews will be conducted, and data collected until the researcher has up to 40 qualified participants or until saturation is reached. All interviews will be digitally audio recorded and transcribed verbatim by primary researcher; once interviews are transcribed the audio recordings will be properly discarded.

In-person interviews will be conducted in a private research office on campus (i.e., a reserved private classroom or room in the library, or private conference space in the Sport, Exercise, and Performance Psychology offices). Privacy will be determined by scheduling access to the room as assurance that no other individuals will attempt to use the space at the same time. Phone and Skype interviews will be conducted via private home office. Actions will be taken (e.g. pre-scheduled use of office, explanation of confidentiality to surrounding parties, and locked door for confirmation of no entry) to ensure that no other individual enters the office during the allotted interview time.

### 4. Alternative Procedures

A participant may withhold participation and also withdrawal during any part of the study

without penalty.

### 5. Benefits

Although there are no direct benefits to participants, the benefits of this study could lead to deeper understanding of what psychosocial skills are being taught in athletic training curriculums and also how they are being taught. Having qualitative information from practicing athletic trainers, researchers can gain a different perspective and can begin the process to develop protocols of how psychosocial interventions should be taught to ensure competent and confident athletic trainers.

### 6. Risks

There are no known risks to you presented through involvement in the study.

### 7. Anonymity/Confidentiality

A pseudonym (fake name) will be assigned to each participant for this study, in order to protect identity. Any published results of the research will refer to you by your pseudonym; no real names will be used in the study. All interview transcripts will be stored on a password-protected, personal computer and a hard copy will be locked in a filing cabinet in the primary researcher's home, maintained for 5 years following completion of the study and then destroyed. After interviews are transcribed, audio recordings will be destroyed. Any other information that could potentially be used to identify you or other participants will be changed or excluded from the transcripts.

### 8. Consent

Appendix D – will be placed at beginning of Qualtrics PDQ before collecting any data. Merged in-person and skype consent forms so there is only one form they have to read and sign.

### 9. Certification

I certify that the protocol and method of obtaining informed consent as approved by the Institutional Review Board (IRB) will be followed during the period covered by this research project. Any future changes will be submitted to IRB review and approval prior to implementation. I will prepare a summary of the project results annually, to include identification of adverse effects occurring to human participants in this study. I have consulted with faculty/administrators of any department or program which is to be the subject of research.

\_\_\_\_\_  
*Principal Investigator*

\_\_\_\_\_  
*Date*

**Reminder: Be sure to submit sixteen (16) individually collated and bound (i.e. stapled or paper clipped) copies of this form with your application.**

*NOTE: Your proposal **WILL NOT** be reviewed until the completed packet is received in its entirety.*

*Appendix C***PARTICIPANT RECRUITMENT EMAIL****ATHLETIC TRAINERS AND PSYCHOSOCIAL INTERVENTION: WHICH SKILLS ARE  
RETAINED AND USED MOST OFTEN IN PRACTICE**

The following email will be sent to members of the National Athletic Training Association (NATA), NATA Survey, the sportpsychlistserv, and NATA DigestDen. These populations best capture those whom may have access to settings that fulfill inclusion criteria for the present study.

Hello Certified Athletic Trainer,

My name is Jasmine Oates and I am a Masters candidate at Barry University in the Sport and Exercise Sciences department and I am interested in understanding the experiences of certified athletic trainers within the Psychosocial Intervention and Referral Competency.

Over the last year I have become increasingly interested in confidence levels of athletic trainers when it comes to psychosocial interventions and how they practice these interventions with their athletes. Athletic injuries can cause damage at the physical and psychological level and rehabilitation protocols may need to be adapted to ensure proper healthcare is being administered. Therefore, this study is aiming to gain a greater understanding of how the psychosocial competency is implemented in practice. The investigation requires the participants to disclose information on their experiences within the psychosocial competency in a one-time interview after signing a consent waiver and completing a pre-interview demographic questionnaire (PDQ). After submitting the PDQ, participants will be asked to enter their email address so the principle researcher can get in contact to schedule the one-time interview.

Criteria for a participants' inclusion in the study are as follows: certified through the BOC after 2009, have at least 3 years of athletic training experience, currently practicing athletic training in the DI, DII, DIII, NAIA, or Professional athletic setting, and willingness to talk about their lived experiences.

If you have an interest in being a participant in this study, please click the link below. If you would like more information or have questions about the study, please contact me, the principal researcher, at [jasmine.oates@mymail.barry.edu](mailto:jasmine.oates@mymail.barry.edu).

[https://fsu.qualtrics.com/jfe/form/SV\\_6VfP4Wx8yLjJwk5](https://fsu.qualtrics.com/jfe/form/SV_6VfP4Wx8yLjJwk5)

Thank you for your time and consideration.

Best Regards,

Jasmine Oates, ATC, LAT, CSCS

*Appendix D***BARRY UNIVERSITY INFORMED CONSENT FORM****ATHLETIC TRAINERS AND PSYCHOSOCIAL INTERVENTION: WHICH SKILLS ARE  
RETAINED AND USED MOST OFTEN IN PRACTICE**

You are invited to be in a research study examining experiences of certified, practicing athletic trainers. You were selected as a possible participant because you were certified during or after 2009, have been certified at least three (3) years, and currently practicing in an athletic setting. We ask that you read this form before agreeing to be in the study.

This study is being conducted by Jasmine Oates, ATC, LAT, CSCS, Department of Exercise Sciences, Barry University.

**Background Information:**

The purpose of this study is to further the knowledge on the experiences of certified athletic trainers. This will be assessed by having athletic trainers self-disclose on several questions regarding their experiences within the psychosocial aspect of their practice. Several theories currently exist about the relationship between athletic trainers and the psychosocial competency, and it is the goal of the present study is to have a better understanding of which interventions are used and how they are utilized.

**Procedures:**

After consenting to be a participant, passing the screening questionnaire, and filling out the Pre-interview Demographics Questionnaire (PDQ), we would ask you to participate in an interview and answer a series of questions regarding psychosocial intervention. The estimated length of participation for the whole study is up to 90 minutes; approximately 20 minutes for the PDQ and somewhere between 30 to 60 minutes for the interview. Participation is voluntary so a participant may drop out of the study at any time without penalty.

**Risks and benefits of being in the study:**

There are no known risks associated with this given study. Although there are no direct benefits to you, your participation in this study may help our understanding of how athletic trainers utilize the psychosocial intervention. As a participant you will be contributing to the knowledge and growth of athletic training curriculum concerning psychosocial intervention, which will greatly benefit the field of athletic training and sport psychology.

**Confidentiality in Person:**

As a research participant, information you provide will be held in confidence to the extent permitted by law. Your signed consent form will be kept separate from the data. You will select a pseudonym (fake name) for this study, which I will substitute for your real name whenever you make comments that might identify you. Any published results of the research will refer to you by your pseudonym; no real names will be used in the study. All interview transcripts will be stored on a password-protected, personal computer and a hard copy will be locked in a filing

cabinet in the primary researcher's home, maintained for 5 years following completion of the study and then destroyed. After interviews are transcribed, audio recordings will be destroyed. Any other information that could potentially be used to identify you or other participants will be changed or excluded from the transcripts. This is done to help preserve the confidentiality of your responses. I will only share your interview (not contact details or real name) with members of the research group assisting me in this study. 30. Members outside of the research group will never have access to any materials, which might identify you.

### **33. Confidentiality for Skype:**

As a research participant, information you provide will be held in confidence to the extent permitted by law. As this project involves the use of Skype: to prevent others from eavesdropping on communications and to prevent impersonation or loss of personal information, Skype issues everyone a "digital certificate" which is an electronic credential that can be used to establish the identity of a Skype user, wherever that user may be located. Further, Skype uses well-known standards-based encryption algorithms to protect Skype users' communications from falling into the hands of hackers and criminals. In so doing, Skype helps ensure user's privacy as well as the integrity of the data being sent from one user to another. If you have further concerns regarding Skype privacy, please consult the Skype privacy policy. To ensure confidentiality, the researcher will establish a separate Skype account for this research project only. After each communication, the researcher will delete the conversation history. Once this is done, the conversation cannot be recovered. The researcher will use a handheld recorder to record the interview. After the interview has been conducted, the audio recorder will be kept in a locked drawer in the research home, personal desk. After the interview has been transcribed verbatim, the recording will be permanently deleted. All interview transcripts will be stored on a password-protected, personal computer and a hard copy will be locked in a filing cabinet in the primary researcher's home, maintained for 5 years following completion of the study and then destroyed.

### **Contacts and Questions:**

If you have any questions about the study, please contact me at 615-772-1678 or at [jasmine.oates@mymail.barry.edu](mailto:jasmine.oates@mymail.barry.edu). Or you may contact my research supervisor, Dr. Kimberly Cologgi, who is available to assist in the process as necessary and answer any questions if need be, [kcologgi@barry.edu](mailto:kcologgi@barry.edu) or 32. 305-899-4890. You may also contact Jasmine Trana, the contact for Barry University's Institutional Review Board at 305-899-3020 or by email at [jtrana@barry.edu](mailto:jtrana@barry.edu)

### **Voluntary Consent:**

I acknowledge that I have been informed of the nature and purposes of this experiment by Jasmine Oates and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

---

*Signature of Participant*

---

*Date*

---

*Researcher*

---

*Date*

*Appendix E*

SCREENING QUESTIONNAIRE

1. Are you currently certified by the Board of Certification (BOC)?
2. Did you get certified during or after the year 2009?
3. Are you currently practicing athletic training in the Professional, NCAA Division I, II, III, or NAIA athletic setting?
4. Are you willing to discuss the psychosocial aspect of your athletic training experiences?



*Appendix F*

DEMOGRAPHIC QUESTIONNAIRE

1. Age:
2. Gender:
3. Ethnicity:
4. Country of Origin:
5. Marital Status:
6. Income:
7. Education Level:
8. Degree obtained in athletic training (BS/MS/PhD):
9. Year of certification:
10. Years of Experience:
11. What athletic training settings have you gotten experience in?
12. Current practice setting:
13. Job Title:
14. Time in current position:
15. Access to Sport Psychologist and/or Sport Psychology Consultant
16. Sport psychology or similar courses taken:
17. Email address

*Appendix G*

**INTERVIEW QUESTIONS**

1. What is your definition of 'psychosocial skills'?
2. When you think about your education experience, what psychosocial or mental skills were introduced to you? What type of class did you learn these skills in?
3. Which, if any, of those skills do you use with your injured athletes?
4. How often do you use those mental skills with the injured athletes?
5. How do you instruct your athletes on how to use those skills? When do you suggest the athlete use those mental skills?
6. Is there a mental skill you use more often than others?
7. How do you perceive the athletes take your advice/instruction of mental skills?
8. What are some common psychological signs and symptoms an athlete may show because of their injured status?