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Sport injury anxiety has been identified as a sport-specific anxiety that focuses on athletes' apprehensions about sustaining an injury while participating in their sport (Cassidy, 2006a, Cassidy, 2006b). While there has been research on how athletes cope with injuries they have sustained and sport anxiety while recovering from the injury, researchers have not yet identified how athletes cope with the anxieties surrounding the possibility of sustaining an injury in the future. The purpose of this study was to identify how athletes cope with sport injury anxiety by determining the relationship between sport injury anxiety and different coping strategies. Collegiate athletes completed a demographic survey, the Sport Injury Anxiety Scale (SAIS: Cassidy, 2006a) and the Brief COPE (B-COPE: Carver, 1997). The relationships between the SAIS and B-COPE were assessed using Pearson correlation. It was hypothesized that overall levels of SIA would be positively associated with avoidance coping strategies and inversely related to approach coping strategies. Results partially supported the hypotheses, showing that overall levels of SIA were positively related to self-distraction and self-blame, which are avoidance coping strategies. Follow-up correlational analyses were conducted and significant inverse relationships were found among avoidance coping strategies and subfactors of sport injury anxiety and well as positive relationships among approach coping strategies and subfactors of sport injury anxiety. Additional exploratory analyses using MANOVAs were conducted, however no significant differences were found in SIA or coping strategies in regards to level of injury risk or restriction. Females were found

to have higher levels of overall sport injury anxiety as compared to men and tended to use more self-distraction as a coping strategy than men. Perceived likelihood of future injury was also found to be significantly correlated with sport injury anxiety as well as avoidance coping.

THE RELATIONSHIP BETWEEN COPING AND SPORT INJURY ANXIETY AMONG COLLEGE ATHLETES

by

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CHAPTER I

INTRODUCTION

There are a large number of reported injuries in sport and these injuries often produce many adverse consequences (Kleinert, 2002; Tripp et al., 2007; Williams & Andersen, 2007). Sport injuries place a financial burden on the economy, with costs for hospitalizations related to sport injury being estimated at $485 billion over a four-year period (de Loes, Dhalstedt, & Thomee, 2000). Costs for treatment and rehabilitation can be quite expensive, for example an anterior cruciate ligament (ACL) reconstruction surgery can cost around $17,000 (Cumps, Verhagen, Annemans, & Meeusen, 2008). Additionally, previous studies have shown that over 30% of collegiate athletes will sustain an injury that results in an absence of at least one day of practice or a game each year (National Council of Training, 1999). Injury in sport is not specific only to collegiate and elite athletes, but is also a threat for recreational players. Past studies have shown that nearly half of recreational athletes incurred injuries that prevented them from playing for at least a full day (Hardy & Crace, 1990; Williams & Andersen, 2007). Furthermore, in the United States close to five million sport-related injuries require emergency room visits each year (Gotsch, Annest, & Holmgreen, 2002).

With all of the sport-related injuries reported across the United States each year, would appear that the experience of an injury during sport is a risk athletes take when suiting up to play (Williams & Andersen, 2007). Injuries can occur in many different

forms, ranging from an acute or sudden injury, to chronic or long-term issues, to a career-ending trauma (Tripp, Ebel-Lam, Stanish, & Brewer, 2007). With any type of injury there is not only the possibility of physical disability, but also affective consequences such as anxiety (Kleinert, 2002; Kvist, Ek, Sporrstedt, & Good, 2005; Smith, Scott, O'Fallon, & Young, 1990). Experiencing anxiety related to participating in a sport can be referred to as sport-specific anxiety, which means that the anxiety is specific to the sport domain as a whole, not just to a particular sport.

Before further discussing anxiety, it is important to determine what results in athletes feeling anxiety during sport. Research has found that an athlete's perception and evaluation of a situation determines whether or not s/he feels anxiety. This perception and evaluation is referred to as cognitive appraisal (Albison & Petrie, 2003; Folkman et al., 1986; Wiese-Bjornstal et al., 1998). The cognitive appraisal of events involves the athlete assessing a situation for potential harm and then determining the appropriate coping resources to deal with the potential harm. If the athlete perceives a situation as harmful and determines s/he does not possess adequate coping strategies, then the situation is perceived as stressful and anxiety is likely to occur (Folkman, et al., 1986; Lazarus, 1991). In regards to sport injury research, two models of cognitive appraisal have been utilized to help understand athletes' injury appraisal (Lazarus, 1991; Wiese-Bjornstal et al., 1995). Research supporting Lazarus's model identifies cognitive, motivational, and relational components to understand emotion surrounding a situation. The Wiese-Bjornstal et al. model (1995) was developed to examine athletes' cognitive, emotional, and behavioral responses to athletic injury and rehabilitation. Literature

supporting the Wiese-Bjornstal et al. model also describes factors, such as personality traits, injury characteristics (Crossman & Jamieson, 1985; McDonald & Hardy, 1990; Wiese-Bjornstal et al., 1995) or situational and environmental factors (Pearson & Jones, 1992; Smith et al., 1990) that tend to increase or decrease certain behavioral and cognitive responses to injury. Therefore, two athletes could experience similar injuries or situations and react in two different ways because of their perceptions of the event and personal coping strategies. One athlete may not perceive the injury or situation as stressful, while the other athlete could experience heightened anxiety because the perceived demands of the situation outweigh the perceived coping resources (Albison & Petrie, 2003; Folkman et al., 1986).

Anxiety surrounding injury, or sport injury anxiety, is an important research area because the previous literature focusing on anxiety and injury has demonstrated negative consequences for athletes. Sustaining an injury or being concerned about the potential of an injury in sport can result in anxiety for athletes, (Chan & Grossman, 1988; Daly et al., 1995; Lavalleé & Flint, 1996), and anxiety has been found to be maladaptive in the sport domain (Hardy, 2002; Mullen, Lane, & Hanton, 2009). Anxiety can have cognitive and somatic components that can lead to adverse effects. Cognitive anxiety is associated with mental effects and concentration disruptions, such as mind-wandering, self-doubts, and concerns about poor performance. Somatic anxiety refers to the bodily sensations associated with anxiety, such as increased heart rate, stomach aches, muscle tightness, and jitters (Smith et al., 1990).

In addition to anxiety being a result of injury, high levels of anxiety can lead to injuries through the cognitive and somatic elements. Cognitively, the athletes can be distracted from their performance because they are concerned about irrelevant cues. This cognitive distraction can result in the narrowing of their peripheral vision, making them less aware of their surroundings, which could lessen their reaction time to external events such as an approaching opponent or a change in their environment (Walker, Thatcher & Lavalle, 2010; Williams & Andersen, 1998). Increased somatic anxiety can lead to increased muscle tension, which has been shown to lead to an increased risk of injury because tight muscles have a higher likelihood of tearing or straining (Mullen et al., 2009).

It has also been found that athletes with high levels of anxiety are related to decreases in performance (Chan & Grossman, 1988; Daly et al., 1995; Lavalleé & Flint, 1996). Decreased performance is often a result of high levels of both cognitive and somatic anxiety. Athletes with high cognitive anxiety have reported less favorable perceptions of sport participation and decreased self-confidence (Mullen, et al., 2009). This can result in athletes becoming unsure and doubtful about their actual capabilities. The high levels of somatic anxiety, such as muscle tightening or increased heart rate can lead to earlier muscle fatigue (Nideffer, 1983; Williams & Andersen, 1988). This would cause athletes to be unable to perform to their actual abilities, therefore resulting in a decreased performance level (Chase, Magyar, & Drake, 2005; Podlog & Eklund, 2010).

The literature has demonstrated a strong link between increased anxiety and injury incidents (Chan & Grossman, 1988; Kolt & Kirkby, 1994; Lavallée & Flint, 1996;

Leddy, Lambert, & Ogles, 1994). Studies have found that athletes with higher levels of sport-specific anxiety, such as competitive trait anxiety, sustained more injuries during sport than athletes who are less anxious (Kolt & Kirkby, 1994). Athletes who became injured while playing their sport displayed higher anxiety levels than athletes who did not sustain an injury during their sport (Lavallée & Flint, 1996; Leddy et al., 1994). When athletes were prevented from participating in their sport due to an injury, they demonstrated higher levels of anxiety than unrestricted athletes (Chan & Grossman, 1988). Furthermore, athletes with more severe injuries have been shown to have higher anxiety levels than athletes with no injuries or less severe injuries (Smith, Scott, O'Fallon, & Young, 1990). Through these studies, the findings that anxiety tended to lead to increased injuries and that sustaining an injury often leads to increased anxiety were supported for various sport types, competitive levels, and both genders. However, even though a relationship has been found between anxiety and injury, it is still unclear as to how the athletes appraise their injuries and what sustaining an injury means to them. There are many aspects of an injury that could cause athletes anxiety such as impairments to athletic identity (Leddy et al., 1994), impaired body image (Chan & Grossman, 1988), or worries of re-injury (Walker et al., 2010).

Because of this link between sport injury and anxiety, sport injury anxiety has begun to be researched as a specific form of anxiety. Sport injury anxiety is a sport-specific anxiety that focuses on athletes' anxiety in regards to sustaining an injury during their sport performance (Cassidy, 2006a). This type of anxiety focuses on the athletes' cognitive appraisal of injury, identifying what sustaining an injury would conceptually

mean to the athlete. In past research, seven different subfactors of sport injury anxiety were found to be most prominent with athletes. These are anxieties related to losing athleticism, being perceived as weak, experiencing pain, losing social support, letting down important others, experiencing re-injury, and having impaired self-image (Cassidy & Morgan, 2005; Cassidy, 2006a; Cassidy, 2007).

Anxiety related to situations where injury can occur has also been demonstrated outside of the sport domain (Thibodeau, Fetzner, Carleton, Kachur, & Asmundson, 2013; Vlaeyen et al., 1995). Research has demonstrated that individuals with chronic low back pain often experience kinesiophobia, meaning "fear of movement". Kinesiophobia often results from the individual not wanting to experience pain or reinjury. As demonstrated in chronic low back pain patients, kinesiophobia can result in behavioral impairments or avoidance of activities (Vlaeyen et al., 1995). The literature shows that kinesiophobia and fear of injury are likely to be predictive of disability levels in chronic low back pain patients, because these individuals will often avoid physical activities. It was shown that individuals who had higher levels of kinesiophobia performed worse on a lifting task, regardless of actual pain level (Thibodeau et al., 2013; Vlaeyen et al., 1995). Rather, individuals were more anxious about the potential of experiencing pain or becoming reinjured and thus either avoided the activity or performed at a lower level. Even though these individuals may not be defined as athletes, it appears they still experience some of the same anxieties surrounding injury-likely situations as athletes. Additionally, because behavioral impairments and avoidance have been found in the chronic low back pain

individuals, it is possible that the same consequences could arise in athletes who have higher levels of sport injury anxiety.

Because anxiety in sport can produce negative consequences for athletes, it is important to understand how athletes cope with their anxiety. When athletes cope with stressful situations, they are consciously altering their thoughts or behaviors in attempts to alleviate the stressful situation (Folkman et al., 1986; Lazarus & Folkman, 1984). Coping serves to ameliorate stressful emotions associated with the event and/or to modify the relationship between the athlete and the environment. Two broad types of coping frequently referenced in the literature are approach and avoidance coping. Approach coping is when an individual directly addresses or focuses on alleviating the stressor at the source. Avoidance coping, on the other hand, is when an individual distances himself or herself from the stressor and evades actively confronting the stressor (Billings & Moos, 1981; Kim & Duda, 2003). Anxiety is lessened when athletes perceive that their coping resources outweigh the demands of the stressful situation (Folkman et al., 1986). Previous research has suggested that approach coping strategies tend to be more beneficial, while avoidance coping strategies are viewed as maladaptive (Eubanks & Collins, 2000; Giacobbi & Weinberg, 2004; Kim & Duda, 2003). Literature has demonstrated that athletes do use coping strategies when dealing with sport anxiety and that the coping strategies are related to the type of anxiety athletes experience (Campen & Roberts, 2001; Lazarus, 1984).

While coping research demonstrates that athletes use various strategies to cope with anxieties related to sport, coping with sport injury anxiety has not yet been

examined in the sport psychology literature. The literature suggests that coping techniques could be related to the type of anxiety experienced (Campen & Roberts, 2001), therefore, it would be beneficial to understand how athletes cope with sport injury anxiety. Situations where there is the potential for injury can affect athletes in various ways, as demonstrated by the subfactors of sport injury anxiety (Cassidy, 2006a). These different components could each elicit different coping strategies within athletes in order to understand the ways that athletes cope with sport injury anxiety, which may provide insight into how to help athletes overcome this type of anxiety (Cassidy, 2006b).

Statement of Problem and Purpose

The main purpose of this study was to examine how athletes cope with sport injury anxiety by exploring the relationship between sport injury anxiety and various coping strategies.

Hypotheses

1) Overall levels of sport injury anxiety are positively associated with avoidance coping strategies (self-distraction, denial, substance use, behavioral disengagement, venting, humor, self-blame).
2) Overall levels of sport injury anxiety are inversely related to approach coping strategies (active, planning, seeking emotional/instrumental social support, positive reframing, planning, acceptance, religion).

CHAPTER II

REVIEW OF THE LITERATURE

To provide a better understanding of these concepts, this literature review will examine research identifying (a) the cognitive appraisal and models of sport injury, (b) the relationship between anxiety and injury, (c) sport injury anxiety, and (d) coping with anxiety in sport.

Cognitive Appraisal

When presented with a potentially stressful situation, individuals identify the extent to which the situation is harmful to their wellbeing and then determine their resources to overcome the stressor (Folkman et al., 1986). This is the cognitive appraisal process. The following section will further describe the cognitive appraisal process, discuss models of cognitive appraisal related to sports and injury, and identify the importance of taking athletes' cognitive appraisals into account when examining sport anxiety.

Process of Cognitive Appraisal

Literature surrounding anxiety in sport often discusses cognitive appraisal models to describe the process of how athletes interpret the potential for injury. When individuals encounter a potentially stressful situation, they cognitively appraise the event (Albison & Petrie, 2003; Folkman et al., 1986; Wiese-Bjornstal et al., 1998). This is an evaluative process in which an individual determines if the encounter poses some sort of

threat and subsequently if there is something he or she can do to prevent or improve the circumstances (Lazarus & Folkman, 1984). The cognitive appraisal process is composed of a primary and secondary appraisal process.

During primary appraisal, the individual determines the extent to which the present situation is threatening to something of importance in his or her life and what may be at stake in the situation (Wiese-Bjornstal et al., 1995). For example, the individual may decide if there is any personal investment in the situation, if the interaction could be helpful or harmful to potential goals or values, or if the wellbeing of his or herself or a loved-one is in jeopardy (Folkman et al., 1986). Through the secondary appraisal, the individual identifies the resources available and decides upon his or her ability to sufficiently alleviate any potential harm from the situation (Folkman et al., 1986; Lazarus & Folkman, 1984).

The interaction and weight of both the primary and secondary appraisals create the whole cognitive appraisal and the individual determines if the situation is stressful. When the perceived demands of an event (primary appraisal) outweigh the individual's perceived coping abilities of the event (secondary appraisal), a situation is perceived as stressful and anxiety can occur (Albison & Petrie, 2003; Folkman et al., 1986; Lazarus & Folkman, 1984).

Models of Cognitive Appraisal and Sport Injury

Research supporting models of psychological responses to sport injury demonstrate that outcomes to a potentially stressful encounter can be cognitive, emotional, or behavioral in nature (Lazarus, 1991; Wiese-Bjornstal et al., 1995). How an

individual appraises potentially stressful situations is based on a number of different personal and situational factors (Wiese-Bjornstal et al., 1995; Andersen & Williams, 1988). In regards to the sport psychology literature surrounding the relationship between anxiety and injury, a common model used is the Weise-Bjornstal et al. (1995) model of psychological response to athletic injury and rehabilitation. This model describes an athlete's cognitive appraisal specific to sustaining an injury and was based off of Lazarus's (1991) cognitive-motivational-relational theory (CMRT) of emotion.

Lazarus's (1991) CMRT of emotion purports that to understand an emotion, the theory must contain cognitive, motivational, and relational components. The cognitive component refers to the fact that the individual acknowledges the situation and is actively appraising the personal implications of the event. For example, an individual must recognize that a situation is stressful and could cause some sort of harm. In regards to the motivational component, this means that the individual's reaction and appraisal will be in response to personal goals and how the event will benefit or harm these goals. Lastly, the relational component describes the transactional relationship between the individual and the environment, meaning that the individual believes there is something important at stake. Furthermore, all of the components influence one another, meaning an individual's cognitions could affect his motivation and relation, as well as the motivation affecting the relations and cognitions.

Using these three components, Lazarus (1991) discusses the different factors in the primary and secondary appraisals within the CMRT of emotion. His three types of primary appraisal are goal relevance, goal (in)congruence, and goal content. Essentially,

these appraisals assess the extent to which the individual's goals are at stake and the potential outcome of the situation. The secondary appraisal consists of blame or credit, coping potential, and future expectations. The individual decides how much control he or she has over the situation, if it is possible to alter the situation in anyway, and how coping strategies could be utilized to avoid a negative outcome.

Additionally, the CMRT of emotion reasons that emotions each have a core relational theme and appraisal pattern that is stable among all individuals and situations. For example, anxiety has its own core relational theme of encountering an unknown or abstract threat. While there is no certainty of danger in a situation, an individual may perceive there is some sort of existential threat in the environment. Along with the theme and appraisal pattern, there is also a related action tendency. In the case of anxiety, this tendency is avoidance behavior of the situation where the potential threat may occur (Lazarus, 1991).

The Wiese-Bjornstal et al. (1995) model focuses on athletic injury as the main stressor. It describes possible appraisals of an athletic injury and the resulting cognitive, emotional and behavioral responses. This dynamic model combines both pre-injury moderators with personal and situational mediators to identify an individual's response to an athletic injury. These pre-injury moderators are incorporated using Andersen and Williams' (1988) Stress and Injury Model. This model identifies potential psychosocial risk factors that could increase an athlete's chance of becoming injured, including personality, history of stressors, coping resources, and interventions. Central to the Stress and Injury Model is the athlete's cognitive appraisal of the events surrounding a potential

injury. If the demands of the situation are perceived to outweigh the athlete's coping resources, then an injury is more likely to occur (Albinson & Petrie, 2003; Williams & Andersen, 2007). Pre-injury moderating factors, such as personality, coping resources, and history of stressors, need to be taken into account in the Wiese-Bjornstal et al. (1995) model because the pre-injury factors may be enhanced once the athlete becomes injured.

The psychological response to injury and rehabilitation model takes the Stress and Injury Model a step further to examine post-injury factors and how they affect an athlete's cognitive appraisal of injury (Wiese-Bjornstal et al., 1995). As previously stated, this model incorporates mediating variables, such as personal and situational factors, to help determine cognitive appraisal and response to injury and rehabilitation. Pre-injury factors (personality, history of stressors, coping resources) and post-injury factors, such as injury characteristics and perceived social support, interact with each other and influence the athlete's cognitive appraisal of injury and rehabilitation and the subsequent behavioral and emotional response to the injury. Athletes appraise many aspects of the injury such as their goal adjustment, rate of perceived recovery, and self-perceptions (Wiese-Bjornstal et al., 1995; Wiese-Bjornstal et al., 1998). They may decide if their athletic goals have been altered (Pearson & Jones, 1992), their perceived recovery time (McDonald & Hardy, 1990), and their own capabilities for dealing with the injury and adhering to rehabilitation regimens (Shaffer, 1992; Smith et al., 1990). It is also important to note that the behavioral and emotion responses can influence one another, as well as the cognitive appraisal of the injury. With all this input, the athlete

then determines whether the injury is a serious threat to his or her wellbeing and the coping resources necessary to overcome the threat. These cognitions and appraisals greatly influence athletes' behavioral and emotional responses to sport injury (Wiese-Bjornstal et al., 1995).

Personal factors that have the potential to influence cognitive appraisal of injury include injury characteristics and individual differences. Injury characteristics solely focus on the injury itself and include severity, history, and type of injury. Athletes with an injury perceived to be more serious (Crossman & Jamieson, 1985), history of a previous injury (Wiese-Bjornstal et al., 1995), and an acute injury tend to have a greater negative appraisal of their injury (McDonald & Hardy, 1990; Smith & Wiese-Bjornstal, 1992). Individual differences include psychological, demographic, and physical differences (Wiese-Bjornstal et al., 1995; Wiese-Bjornstal et al., 1998). Negative appraisal patterns have been shown in injured athletes who display lower physical self-worth (Brewer, 1993; Leddy et al., 1994) and motivation has been shown to be a predictor in rehabilitation adherence in injured athletes (Fisher et al., 1998; Duda et al., 1989). Situational mediators include sport-specific situational factors and social/environmental factors (Wiese-Bjornstal et al., 1995; Wiese-Bjornstal et al., 1998). Sport-specific factors are comprised of sport competition level (Lewis & LaMott, 1992; Smith et al., 1993), role on team, time in season, injury context, and team relationships. Social and environmental factors can include influences from the interactions with sports medicine team, family, peers, teammates, and coaches (Wiese-Bjornstal et al., 1998). The athlete's relationship with the sports medicine team has been found to be important

in the athlete's appraisal of the injury and rehabilitation process. A positive relationship between athletes and the individuals within the sports medicine team as well as the perception of the rehabilitation environment, tend to create a more positive appraisal of rehabilitation (Gordan, Milios, & Grove, 1991; Pearson & Jones, 1992).

An important response to sport injury is the emotional or affective response elicited by athletes. Athletes generally have immediate emotional reactions to the injury and further emotions are influenced by their cognitive appraisal and behavioral responses (Wiese-Bjornstal et al., 1995). While some athletes are able to keep a positive outlook after sustaining an injury (Brewer, Petipas et al., 1995; Ievleva & Orlick, 1991), many athletes report some kind of negative mood disturbance after sport injury (McDonald & Hardy, 1990; Smith et al., 1990; Pearson & Jones, 1992). Studies have found that injured athletes have negative emotional responses such as increased anxiety, anger, and depression (Grove, Stewart, & Gordon, 1990; Smith et al., 1993).

According to these cognitive appraisal models, when athletes are in a situation where they have sustained an injury or where an injury could occur they go through a thought process to determine the extent of the potential stress. They determine the demands of the situation and beneficial coping strategies. When these demands outweigh the coping devices, the situation is perceived as stressful and anxiety is likely to occur. For example, Lazarus's (1991) CMRT model demonstrates that a potential reaction to anxiety is avoidance behavior. Research framed within the Weise-Bjornstal et al. (1995) model identifies multiple factors that contribute to the athlete's appraisal and response to an actual or potential sport injury. While athletes may experience similar injuries, they

may not react in the same manner. Understanding these models of cognitive appraisal of injury is a beneficial way to help interpret athlete's anxiety surrounding injury because it can provide deeper insights to what it means to an athlete to potentially become injured. Therefore, it is important to understand anxiety and research surrounding anxiety and sport injury.

Anxiety and Injury

Anxiety has been widely researched in the sport psychology literature and can have many different implications for athletes. This section will define anxiety, provide a general, conceptual understanding of anxiety, and examine the relationship between anxiety and injury in sport.

General Anxiety

Anxiety is a complex cognitive, somatic, and behavioral response to an internal or external stimulus that is elicited from some unknown or potential threat. It has been referred to as an inclination of something that could occur (Spielberger, 1966; Walker et al., 2010). Referring to whether an individual is anxious or has anxiety could imply two different meanings. The individual could at that moment be harboring feelings of anxiety or he or she could consistently have anxiety levels that are higher than the general population. The differences between the two ideas are what define state verses trait anxiety. State anxiety refers to a transient emotional condition brought about by conscious feelings of tension or worry that often changes in intensity depending on the situation (Spielberger, 1996). Individuals with high state anxiety often pair these apprehensive feelings with an increased physiological activation or arousal. The anxiety

is brought about as a response to a stimuli or situation (stressor), and how the individual perceives that stressor determines the extent of his or her anxiety response (Spielberger, 1966).

Trait anxiety, on the other hand, is seen as a predisposition or stable personality factor, meaning it tends to guide how the individual appraises and responds to a presented situation (Kleinert, 2002; Spielberger, 1966). Individuals with high trait anxiety have chronically higher levels of anxiety than most other individuals, which make them prone to view situations in a more negative light. Spielberger (1966) suggested that high trait anxiety individuals have acquired behavioral dispositions, which are learned social attitudes that predispose these individuals to view the world in a more anxiety-provoking manner. Therefore, individuals with higher trait anxiety would also tend to have higher state anxiety, because of their disposition to interpret situations as more threatening. However, it is important to remember that the extent to which an individual feels anxious depends on how the individual appraises the situation (Wiese-Bjornstal et al., 1995; Spielberger, 1966). Furthermore, anxiety can manifest in both cognitive and somatic ways. Somatic anxiety includes the physiological responses such as increased heart rate and muscle tension, whereas cognitive anxiety encompasses negative thoughts such as self-doubt (Lane et al., 1999; Spielberger, 1966).

Anxiety and Sport Injury

Much research has been done to examine the relationship between sport injury and subsequent anxiety levels in competitive, collegiate, and recreational athletes. These

studies have shown an increase in anxiety after becoming injured (Chan & Grossman, 1988; Kolt & Kirkby, 1994; Lavallée & Flint, 1996; Leddy, Lambert, & Ogles, 1994).

Kolt and Kirkby (1994) conducted a correlational, retrospective study to identify the relationship among injury, anxiety, and mood in 115 adolescent competitive gymnasts. Individuals were given the Profile of Mood States-Bipolar Form (POMS-BI) and the Competitive State Anxiety Inventory-2 (CSAI-2), and the athletes reported the number of injuries they had incurred while participating in gymnastics. The injury responses were divided into two categories: zero to three injuries and four or more injuries. Results showed that individuals who had suffered more than four injuries had a greater mood disturbance as measured by the POMS-BI as well as higher anxiety as measured by the CSAI-2 than the athletes who had fewer than four injuries. Specifically, greater differences could be seen in the POMS-BI Composed-Anxious and the CSAI-2 Cognitive Anxiety scores between athletes with fewer and greater number of injuries.

A relationship between anxiety and injury has been shown in collegiate athletes as well. Lavallée and Flint (1996) conducted a correlational study that assessed the relationship among competitive anxiety, mood state, and athletic injury in 55 male varsity athletes from the football and rugby teams. Participants were recruited throughout the season and given the Sports Competition Anxiety Test (SCAT), POMS, the Social Support Scale, and the Social Athletic Readjustment Rating Scale (SARRS). If they became injured during the season, the head student therapist assessed and recorded their injury. Injuries were classified as Grade I, Grade II, or Grade III according to Reid's (1992) classification of injuries. This scale takes into account actual severity and not just

days of performance missed. Results showed that athletes who had incurred more injuries demonstrated higher levels of anxiety as measured by the POMS. Additionally, athletes with more severe injuries reported more tension/anxiety than athletes with less severe injuries.

Leddy, Lambert, and Ogles (1994) completed a prospective study that examined anxiety and depression post-athletic injury in 343 male collegiate athletes from 10 different sports. All athletes completed the Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), and the Tennessee Self-Concept Scale during preseason. Injuries were defined as damage or pain that required medical attention and resulted in the athlete missing game-play time. Knee injuries were the most common, however, injuries were recorded from many different parts of the body. Athletes who became injured after the pretest were given the measures again within one week after injury and again two months after injury. As a control for each injured athlete that repeated the scales, a randomly selected non-injured athlete completed the measures again as well. Results indicated that pretest scores among the athletes were not significantly different, meaning that anxiety levels did not differ significantly among the athletes during preseason. However, athletes who became injured during the season showed significantly higher levels of anxiety and depression and lower levels of self-esteem on the follow-up measures as compared to the non-injured athletes.

Recreational athletes have also been shown to demonstrate a link between anxiety and injury. Chan and Grossman (1988) conducted a prospective study on the psychological effects of injured runners who were no longer able to run because of their

injury. The study consisted of 60 participants who were recreational consistent runners, meaning they ran at least three times per week for a minimum of one year, running at least 20 miles per week. The sample consisted of both males and females, with ages ranging from 15 to 50 years. As part of the demographic survey, participants were identified as prevented and continuing runners. Individuals in the prevented runners group were unable to run for at least four weeks due to a running-related injury, while the continuing runners group was able to sustain their running routine. Participants completed a Running Information Questionnaire, the Rosenberg Self-Esteem Scale, the Zung Depression Scale, and the POMS. After analyzing the surveys received from the participants, results showed that the prevented group displayed significantly greater psychological distress as compared to the continuing group. Importantly, the tension/anxiety measure of the POMS was significantly higher in the prevented group and they showed an increase in depression and decrease in self-efficacy.

Smith et al. (1993) demonstrated increased anxiety and depression in injured recreational athletes as well, using a prospective and longitudinal study that followed athletes during their injury process. Seventy-two college students who were not on varsity teams, but still considered themselves athletes, completed the Emotional Responses of Athletes to Injury Questionnaire (ERAIQ) and the POMS before injury and after an injury if one occurred. Injury has defined as physiological damage that required medical attention and impeded the athlete from participating in his or her sport. It was found that injured athletes had depression and anxiety scores that were significantly

different from the normal college population. Additionally, results indicated that athletes with more severe injuries had significantly higher total mood disturbance and anxiety.

These studies show collective evidence of an increase in anxiety following an injury. These studies were executed using a diverse sample population, demonstrating that this relationship can be seen in various sports, competitive levels, and both genders. Through these studies, it is clear that athletes are anxious about injuries; however it is unclear whether the athletes were anxious about the injury itself or situational factors surrounding the injury. It is possible that athletes could feel more anxiety surrounding injury because of the perceived severity of their injury (Lavallée & Flint, 1996) or the impact the injury could have on their perceptions of their body image (Chan & Grossman, 1988) or athletic identity self-concept (Leddy et al., 1994). Because of this lack of distinction, it is important to delve more deeply into sport injury anxiety to better understand what the injury means to the athlete.

Sport Injury Anxiety

Research in sport and exercise psychology has sought to examine anxiety in sport specific situations. If the athlete appraises the anxiety as debilitative, then many negative consequences can occur such as self-doubt and decreased performance (Ahern & Lohr, 2005, Kvist et al., 2005; Walker et al., 2010). A common potential stressful situation in sport is the possibility of becoming injured and there is literature suggesting that athletes can harbor anxiety about sustaining an injury (Cassidy, 2006; Cassidy, 2007; Kleinert, 2002; Kolt & Kirkby, 1994; Walker et al., 2010; Williams & Andersen, 1998). Sport injury anxiety is a sport-specific type of anxiety that focuses on athletes' appraisal of

anxiety about sustaining an injury and situations that could potentially result in an injury (Cassidy, 2006a). This section will discuss different terminology used to study sport injury anxiety, clearly define sport injury anxiety, and introduce research to highlight the importance of studying sport injury anxiety.

Fear of Injury

Some research has used the term "fear of injury", using the Tampa Scale of Kinesiophobia (TSK) that is proposed to measure fear of injury and pain (Kvist et al., 2005; Cartoni, Minganti, & Zelli, 2005; Tripp et al., 2007). While these studies use the term "fear of injury", the researchers elude to the apprehensions/worries/anxieties about sustaining a first injury or incurring a subsequent injury. Therefore, it is still beneficial to examine these studies to gain a better insight into sport injury anxiety.

Some studies have focused on the fear of injury in gymnastics because of the heightened injury risk inherent in the sport. One study examined the relationship between trait anxiety, fear of injury, and perceived physical abilities (Cartoni et al., 2005). Individuals completed a trait anxiety questionnaire and a Gymnastics Fear Inventory. Results indicated a significant positive correlation between trait anxiety and fear of injury as well as a negative correlation between fear and physical self-efficacy. This seems to demonstrate that individuals who are more fearful of injuries tend to be less confident in their abilities and more anxious. Chase et al. (2005) conducted interviews with adolescent female gymnasts to examine their fear of injury and number of injuries. Results indicated that all athletes had experienced an injury in their career and that all athletes had some type of fear of injury upon returning to their sport.

Furthermore, fear responses were categorized into more specific consequences of injury that were seen as frustrations and potentially contributing to fear of injury. Gymnasts reported worries such as difficulty returning to competition, being unable to participate, fear of serious injury, negative emotional responses, fear of failure, pain, and death. This study demonstrates that the fear of injury response may have many contributing factors and these responses could be different for individual athletes.

Kvist et al. (2005) identified fear of re-injury as a factor in preventing athletes to return to sports following anterior cruciate ligament (ACL) surgery. The study consisted of 62 athletes who had previously undergone ACL reconstruction surgery and completed the TSK and Knee Injury and Osteoarthritis Outcome Score (KOOS). Results indicated that athletes who failed to return to their sport three to four years after injury displayed higher levels of fear of re-injury and pain. Tripp et al. (2007) also found similar results in an ACL reconstruction population. The sample consisted of 49 recreational athletes from 10 different sports who had received reconstructive ACL surgery. Individuals were given the TSK, Shortened POMS, Pain Catastrophizing Scale (PCS), Sport Self-Confidence Inventory, and an assessment of return to sport activity level. It was found that athletes who had greater fear of re-injury were less likely to return to their sport.

Although these studies used the term “fear of injury”, they still demonstrated a negative link between sport injury and anxiety and are beneficial to examine when looking at sport injury anxiety. Additionally, the literature showed themes of apprehensions about pain and re-injury, which are also factors within sport injury anxiety.

Terminology: Fear or Anxiety?

As previously mentioned, while some researchers have approached sport injury anxiety as a fear rather than an anxiety (Cartoni et al., 2005; Chase et al., 2005; Kvist et al., 2005; Tripp et al., 2007), this study will consider it as an anxiety (Cassidy, 2006a; Kleinert, 2002). Fear is often defined as an innate structure, elicited during specific situations of immediate danger, while anxiety has more of a cognitive appraisal and anticipation component. During sport performance, there is always a latent, inherent possibility of becoming injured, which could produce this anxiety depending on how the athlete appraises the possibility of becoming injured. Therefore, this study will refer to the construct as sport injury anxiety rather than fear of sport injury (Kleinert, 2002; Walker, 2006; Walker et al., 2010).

Defining Sport Injury Anxiety

Using the Lazarus (1991) and Wiese-Bjornstal et al. (1995) cognitive appraisal models, sport injury anxiety is described as "the tendency to respond with cognitive and/or somatic anxiety in sport situations where injury is seen as possible and/or likely" (Cassidy, 2006a, pg. 82). Sport injury anxiety focuses on the injury-related influences the athlete has experienced which affect the level of anxiety. These influences include injury history, severity of injury, and time since injury. Additionally, there are three appraisals that are important in the intensity and duration of the sport injury anxiety. These include the athlete's view of the situation, available resources, and perceived negative consequences of an injury. For a greater anxiety response, the athlete must believe the situation is threatening and could result in an injury, he or she is without

necessary resources to overcome the situation, and that an injury would result in negative consequences. Additionally, sport injury anxiety can relate to athletes who have sustained a previous injury and those who have not (Kleinert, 2002; Walker et al., 2010).

Sport injury anxiety has been divided into seven appraisal patterns that have been found to be the most common among athletes (Cassidy, 2006a; Cassidy, 2006b; Cassidy & Morgan, 2005). These appraisal patterns were found through qualitative interviews with collegiate athletes, identifying their perceived consequences of injury (Cassidy & Morgan, 2005). From these interviews, common themes were assessed and identified as factors for sport injury anxiety (Cassidy, 2006a). These factors can help identify what an injury would or does mean to an athlete. Athletes can perceive that an injury would result in a loss of athleticism, being perceived as weak, increased pain, loss of social support, worries about reinjury, letting down important others, and having an impaired self-image (Cassidy, 2006a; Cassidy, 2006b). When athletes are injured, they often cannot fully participate in their sport. This could result in a loss of strength, fitness, and ability and these negative effects can lessen their sense of athletic ability (Cassidy, 2006a; Cassidy, 2006b; Taylor, 1997). Athletes who have anxieties about being perceived as weak may think that their peers believe that they are either faking their injury or not "toughing it out" enough (Cassidy, 2006a; Tracey, 2003). Additionally, studies showed that athletes harbored anxieties about the pain surrounding the actual injury and the potential rehabilitation that may accompany the injury (Cassidy, 2006a; Udry et al., 1997). Many times when athletes are injured and are unable to practice, they spend less time with teammates and coaches. This could result in a sense of loss of social support

because friends and coaches may not be in contact with the athlete as much as before the injury (Cassidy, 2006a; Taylor, 2003; Udry et al., 1997). Anxieties about sustaining a similar injury as a previous injury have also been shown to be common for athletes (Cassidy, 2006a; Taylor, 1997). Sometimes, athletes feel that their sport performance directly affects people around them. Therefore, athletes could perceive that an injury may disappoint important people in their lives, such as coaches, parents, and teammates (Cassidy, 2006a; Gayman & Crossman, 2003; Tracey, 2003). Finally, because athletes may be unable to be physically active due to an injury, they may be unable to practice to maintain their fitness level, and they may develop a negative body image (Cassidy, 2006a; Chan & Grossman, 1988; Leddy et al., 1994). Some of these factors were demonstrated in previous research, such as impaired self-image (Chan & Grossman, 1988) and loss of athletic identity self-concept (Leddy et al., 1994), showing that injured athletes reported greater feelings of impaired self-image and loss of athletic identity than non-injured athletes. However, these researchers did not use a specific sport injury anxiety measure, but rather used general mood measures such as the Profile of Mood States (POMS) or general anxiety measures such as the State-Trait Anxiety Inventory (STAI). Thus, these findings warrant further investigation of these factors with sport injury anxiety specific measures.

As with other types of anxiety, high levels of sport injury anxiety may result in maladaptive cognitive, physiological, and behavioral responses. Athletes could be cognitively distracted thinking about getting injured rather than focusing on task-relevant cues (Cassidy & Morgan, 2005; Podlog & Eklund, 2006). They may have inappropriate

levels of physiological arousal, which could include heightened levels of arousal, resulting in increased muscle tension and narrowing of the peripheral focus (Gould et al., 2002; Walker et al., 2010). Furthermore, athletes could use avoidance behaviors such as hesitancy and bracing that can decrease performance and make them more likely to incur an injury (Cassidy, 2006a; Williams, 2001).

Research on Sport Injury Anxiety

Until recently, there has been limited research on sport injury anxiety because of the lack of measures that specifically measure sport injury anxiety. Since the development of appropriate measures, however, several studies have been conducted on sport injury anxiety. Kleinert (2002) completed a study to examine the effects of sport injury anxiety on 206 collegiate athletes from a variety of sports. Athletes were given the Sport Injury Trait Anxiety Scale (SITAS) and a questionnaire about injury experiences before their winter term, then four months later were asked about their injury occurrence and severity. Injuries were self-reported retrospectively and their severity was assessed. Results showed that athletes who demonstrated higher sport injury anxiety had more less-severe injuries and fewer severe injuries than athletes who had low sport injury anxiety. The researcher proposed that this could be because individuals with high sport injury anxiety may avoid situations where severe injuries could occur.

Cassidy (2008) identified various demographic differences in sport injury anxiety among 491 collegiate athletes using the Sport Injury Anxiety Scale (SIAS), which identifies the seven factors associated with sport injury anxiety: anxiety related to losing athleticism, being perceived as weak, experiencing pain, losing social support, letting

important others down, reinjury, and impaired self-image. This measure was created using the cognitive appraisal framework of the CMRT of emotion (Lazarus, 1991) as well as the model of psychological response to athletic injury and rehabilitation (Wiese-Bjornstal et al., 1995; Wiese-Bjornstal et al., 1998). To identify the different aspects of injury appraisals, Cassidy and Morgan (2005) interviewed previously injured collegiate athletes and distinguished three sets of appraisals, each with four subsets of related anxiety. One appraisal was related to the aversive physical consequences of injury and included anxiety related to re-injury, experiencing pain, loss of normal functioning, and loss of athletic ability. The second set dealt with aversive psychological consequences of injury, including anxiety related to negative body image, experiencing unpleasant affect, having blocked goals, and having an uncertain future. The final group related to the aversive social consequences of injury, containing anxiety related to experiencing social disconnect, loss of social support, others' perceptions of the athlete, and letting important others down (Cassidy, 2006a). From these 12 anxieties, a subsequent pilot study with collegiate athletes narrowed the list down to the seven main subfactors of overall sport injury anxiety: anxiety related to losing athleticism, being perceived as weak, experiencing pain, losing social support, experiencing reinjury, letting down important others, and impairing self-image (Cassidy, 2006a; Cassidy, 2006b).

Female athletes were shown to have less sport injury anxiety in terms of being perceived as weak, having impaired self-image, experiencing reinjury, and experiencing pain as compared with male athletes. Athletes with acute injuries reported less anxiety related to losing athleticism and experiencing pain compared with athletes sustaining

chronic injuries. Additionally, being prevented from playing a sport for longer than one year was related to higher anxiety related to losing athleticism and losing social support. Perceived severity of the injury was associated with higher overall sport injury anxiety as well as anxiety related to losing athleticism, losing social support, and experiencing pain. Furthermore, athletes who had suffered a previous injury demonstrated more anxiety related to experiencing pain (Cassidy, 2006b).

Sport injury anxiety levels occur on a continuum, therefore, athletes can vary in the extent to which they experience anxiety. Additionally, athletes can be high on some factors of sport injury anxiety and low on others (Cassidy, 2006a). To help understand why these sport injury anxiety levels may vary, the secondary appraisal process of interpreting anxiety needs to be taken into account. During this secondary appraisal, the athlete determines the coping strategies he or she possesses to deal with the situation. With sport injury anxiety, athletes determine what types of coping resources they have to prevent or reduce increasing anxiety levels related to sustaining an injury. When athletes perceive they have adequate coping responses, they tend to have lower levels of anxiety (Albison & Petrie, 2003).

Coping

The following section will describe the coping process and identify various coping strategies. Specifically, this review focuses on how athletes cope with sport-specific anxiety to make a connection to coping with sport injury anxiety.

Defining Coping

Athletes' coping strategies greatly influence their cognitive appraisal of a specific event. During the secondary appraisal within the cognitive appraisal process, individuals determine what coping resources they possess to adequately deal with the presented situation (Folkman et al., 1986; Lazarus & Folkman, 1984). Coping occurs when individuals consciously alter cognitive and behavioral techniques used to meet specific stressful external or internal demands. The coping process is a series of conscious thoughts, emotions, and actions (Anshel, 2001; Folkman et al., 1986). Two major functions of coping are the regulation of stressful emotions and the modification of the relationship between the individual and the stressful environmental situation (Folkman et al., 1986). An individual can perceive an outcome of a situation as favorable if s/he believes that the demands were adequately managed, even if there was no specific resolution (Folkman et al., 1986).

There are three key characteristics to an individual's coping process; process oriented, contextual, and no prior assumptions. Coping is process oriented because it is dynamic and can change throughout the situation because it focuses on immediate thoughts and resources the individual possesses. Secondly, it is contextual because the specific situation and demands influence the individual's coping capabilities. Previous research has demonstrated the coping responses are influenced by the specific situation as well as the individual's appraisal of the situation (Albison & Petrie, 2003; Folkman et al., 1986; Lazarus, 1984). Lastly, it is important to note that there can be no prior

assumptions as to whether a particular coping strategy will be successful or unsuccessful at alleviating the perceived stress for each individual (Folkman et al., 1986).

While coping has been categorized in different ways, two broad types of coping are approach and avoidance coping (Kim & Duda, 2003; Roth & Cohen, 1986). These two types of coping strategies focus on the cognitive and behavioral activity in response to a stressor. Approach coping is directed at doing something or thinking about doing something to alter the situation or stressor (Roth & Cohen, 1986). Within these categories there are specific strategies, and individuals may use multiple coping tactics to help ameliorate a stressful situation. For example, there are many coping strategies associated with approach coping, such as active coping, planning, seeking instrumental or emotional social support, positive reframing, acceptance, and turning to religion (Carver et al., 1989; Crocker, 1992). These strategies are referred to as approach coping, because the individual is taking steps towards dealing with the situation or emotions surrounding the situation. On the other hand, individuals can also engage in avoidance coping, which involves taking steps to mentally or behaviorally circumvent the stressor. The individual avoids the actual situation or distracts him or herself from thinking about the situation (Carver et al., 1989; Folkman et al., 1986). Some coping strategies that tend to be referred to as avoidance are self-distraction, denial, substance use, behavioral disengagement, venting, humor, and self-blame (Carver, 1989; Kim & Duda, 2003; Roth & Cohen, 1986). Research has shown that athletes use these various coping strategies to manage anxiety in the sport domain (Anshel, Raviv, & Jamieson, 2001; Campen &

Roberts, 2001; Cresswell & Hodge, 2004; Eubanks & Collins, 2000; Giacobbi & Weinberg, 2000; Ntoumanis & Biddle, 2000).

Coping strategies and sport specific anxiety

Studies have shown that athletes do use coping strategies to manage their sport anxiety levels (Campen & Roberts, 2001). Sport psychologists have identified various ways that athletes cope with sport specific anxiety, such as competitive anxiety (Anshel, Raviv, & Jamieson, 2001; Campen & Roberts, 2001; Cresswell & Hodge, 2004; Eubanks & Collins, 2000; Giacobbi & Weinberg, 2000; Ntoumanis & Biddle, 2000). Research has showed that the type of coping strategy utilized was related to the type of anxiety experienced and the athlete's perception of the event (Campen & Roberts, 2001; Lazarus, 1984). Athletes who experienced more somatic anxiety tended to use somatic and social coping strategies, while athletes who reported more cognitive anxiety preferred cognitive coping strategies (Campen & Roberts, 2001). For example, if an athlete tends to psychically tense up before a game, relaxation techniques may be used more often. However, if the athlete has more self-defeating thoughts, he may use cognitive restructuring to ease his anxiety.

While coping cannot be specifically classified as good or bad for any individual athlete, research has identified strategies that have been shown to be more or less facilitative to athletic performance for some athletes (Campen & Roberts, 2001; Eubanks & Collins, 2000; Ntoumanis & Biddle, 2000). Individuals who used more approach/problem-focused styles of coping such as active coping, planning, positive re-interpretation, tended to perceive their arousal and anxiety as facilitative to their

performance (Anshel et al., 2001; Eubanks & Collins, 2000; Ntoumanis & Biddle, 2000). Many times, in order to alleviate their stressor, athletes will cease attempting to manage the stress. Avoidance coping is when athletes evade confronting the stressful situation and its subsequent effects (Albison & Petrie, 2003; Billings & Moos, 1981). Research has shown that athletes who have higher trait anxiety are more likely to use avoidance coping than athletes with lower trait anxiety (Giacobbi & Weinberg, 2004). Avoidance coping may be beneficial for athletes when a situation is out of their immediate control (Anshel, 2001) or when it the athlete needs to be distracted from the stressful event (Giacobbi et al., 2004). However, if the situation would benefit more from taking action, avoidance coping may be harmful to the athlete. Previous research has also suggested some short term and long term benefits from each coping type. Avoidance coping has been demonstrated to help reduce anxiety in the short term, while approach coping tends to reduce anxiety for the long term. For example, it may be beneficial for an athlete to avoid thinking about his competition anxiety in the short term because he has to start a game soon. While his anxiety may lessen in the short term by avoiding thinking about the stressor, if eventually he does not confront the stressor and deal with it, he may continue to become anxious before each game. By using an approach coping strategy, he may be able to lessen his long term anxiety about competition (Kim & Duda, 2003; Roth & Cohen, 1986).

Additionally, coping research has used samples from a wide range of competitive athletes, drawing from recreational athletes (Campen & Roberts, 2001; Smith & Weinberg, 2001), collegiate athletes (Giacobbi & Weinberg, 2000; Ntoumanis & Biddle,

2000), and regionally, nationally, and internationally competitive athletes (Anshel et al., 2001; Cresswell & Hodge, 2004; Eubanks & Collins, 2000; Gould et al., 1997). This demonstrates a trend that coping strategies can be and are utilized at all different competitive levels of sport and sport type.

Coping with sport injury anxiety

While there has been substantial research examining coping and sport injury or coping and sport specific anxiety, little research has been completed on how athletes cope with sport injury anxiety. From the findings related to coping with sport specific anxiety research, it has been demonstrated that the type of anxiety experienced and how the athlete perceives this anxiety is essential in understanding how an athlete copes with that specific anxiety. In this study, the specific anxiety is sport injury anxiety and the subfactors, which help identify the underlying reason for the anxiety. Cassidy (2006b) even suggests alleviating sport injury anxiety based on the specific subfactor the athlete is experiencing. It is important to examine how athletes can successfully cope with sport injury anxiety using a sport injury anxiety specific measure, which can provide sport psychology consultants and the sports medicine team better insight into how to effectively treat athletes with high sport injury anxiety.

Rationale for Examining Sport Injury Anxiety and Coping

Injury and anxiety are two commonly researched topics within sport psychology, but anxiety surrounding a possible future injury has not been as thoroughly investigated. There is a strong link between injury and anxiety and both have been found to produce negative consequences for athletes (Chan & Grossman, 1988; Lavallee & Flint, 1996),

thus identifying a rationale to further investigate sport injury anxiety. Research has also demonstrated that athletes cope with sport anxieties (Anshel, 2001; Campen & Roberts, 2001), therefore, it would stand to reason that athletes also cope with sport injury anxiety. However, the coping strategies utilized to manage sport injury anxiety are unknown (Cassidy, 2006). Understanding how athletes cope with sport injury anxiety and its various subfactors could provide consultants with strategies to help athletes overcome their anxieties (Cassidy, 2006). Therefore, the goal of this study is to identify how athletes cope with sport injury anxiety by determining if there are particular coping strategies related to managing sport injury anxiety and its various subfactors.

CHAPTER III

METHODS

Outline of the Procedures

The purpose of this investigation was to identify how athletes cope with sport injury anxiety. Specifically, this study aimed to explore the relationship of sport injury anxiety and coping strategies using a descriptive correlational design.

Participants

The sample for this study consisted of 99 male (n=84) and female (n=15) collegiate varsity athletes from NCAA Division I (n= 40), Division II (n= 29), and Division III (n= 30) schools. These athletes were recruited from soccer (n= 21), football (n=30), baseball (n=29), basketball (n=4), and softball (n= 15). It should be noted that all of the female participants were recruited from softball (See Table 1). Athletes in high injury risk sports (n= 55) included soccer, football, and basketball, while athletes in low injury risk sports (n=44) included baseball and softball. There were 84 participants who could currently participate in their sport without any modifications, while 15 participants were unable to participate in their sport without modification. Previous studies examining the relationship between anxiety and injury have shown moderate effect sizes (around 0.30) (Cartoni et al., 2005; Kolt & Kirkby, 1994; Lavallee & Flint, 1996). A power analysis indicated that for a moderate effect size using Pearson correlation, 115

participants are needed. Using 99 participants, the predicted power for the correlational analyses of an effect size of 0.30 was 0.92.

Table 1

Sample Sizes of Gender within each Sport

Division	Sport	Males	Females
Division I	Soccer	21	0
	Softball	0	15
	Basketball	4	0
Division II	Baseball	29	0
Division III	Football	30	0

Materials

Demographic Survey. Demographic information was collected, including gender, competitive level, sport participation, restriction of play, and history of previous injuries. Perceived severity of previous injury, perceived anxiety of previous injury, and perceived likelihood of future injury were assessed using a 1-5 point Likert scale, where the participant indicated whether they perceived their injury to be "not severe at all" (scored as a one) to "very severe" (scored as a five), "not anxious at all" (scored as a one) to "very anxious" (scored as a five) and "not likely at all" (scored as a one) to "very likely" (scored as a five), respectively. Sport participation was the sport in which the athlete was a varsity athlete. Athletes indicated how many injuries they had incurred within the past three years that required them to miss at least one day of sport participation. In regards to restriction level, athletes self-identified (yes or no) if they

were able to currently participate in their sport without any modifications. These questions about previous injury and current participation level were collected to determine if they had any effect on sport injury anxiety. Specifically, the perceived likelihood of future injury was of interest because one of the assumptions of sport injury anxiety is that the athlete believes injury is possible and/or likely while participating in sport.

Sport Injury Anxiety. The Sport Injury Anxiety Scale (SIAS; Cassidy, 2006) [formerly known as the Sport Injury Appraisal Scale] was utilized to assess athlete's sport injury anxiety (Cassidy, 2006). This measure can be administered to athletes who have not been previously injured as well as those who have sustained an injury. Because of this, the SIAS appears to be the most comprehensive and useful measure for sport injury anxiety because it not only identifies the magnitude and direction of the anxiety, but also the source of the anxiety. It focuses on how the athlete appraises the injury (or potential injury), to distinguish what is at stake for the athlete (Cassidy, 2007). There are 29 items divided into seven subscales, which are the subfactors for sport injury anxiety; losing athleticism (five items), experiencing pain (four items), loss of social support (four items), reinjury (four items), letting down important others (four items), and impaired self-image (four items). These items are in statement form and rated using a five-point scale from "strongly disagree" to "strongly agree". There is also a "not applicable option" if necessary. The scoring system is on a one to five scale, with a score of one meaning the athlete has very low sport injury anxiety and a five meaning the athlete has very high sport injury anxiety. These sub-scores are calculated by averaging the scores

from each item in each subfactor. The overall score comes from averaging all of the items. Furthermore, the items are also directed at targeting the different types of appraisals and anxiety, thus the individual can also have sub-scores within each category that can help determine what factors are contributing to the sport injury anxiety (Cassidy, 2006).

Previous research tested the scale's reliability and found an overall alpha score of α=0.95. Internal reliability across the seven subscales was also found: losing athleticism (α=0.89), being perceived as weak (α=0.90), experiencing pain (α=0.89), loss of social support (α=0.87), reinjury (α=0.87), letting down important others (α=0.86), and impaired self-image (α=0.81) (Cassidy, 2006a). Confirmatory factor analysis supported the seven factors, but supported reducing the number of items down to 21 (Cassidy, 2007). However, only the 29-item survey was available for use for this study.

Coping Strategies. The Brief COPE (B-COPE) was adapted from the COPE Inventory that was created to assess the different ways that individuals cope with stressful situations (Carver et al., 1989; Carver, 1997). The B-COPE has been widely used and accepted in sport psychology literature, thus providing justification for use in this study (Crocker & Graham, 1995; Eubank & Collins, 2000; Giacobbi & Weinberg, 2000; Ntoumanis & Biddle, 2000). The B-COPE was also chosen for this study in an attempt to prevent against testing fatigue for participants, since the participants completed two additional questionnaires.

The B-COPE was developed because previous participants had become impatient while taking the full instrumentation. This version was modified using previous factor analysis and participant feedback. For items to appear in the B-COPE, the items needed to have a high loading in the original factor analysis as well as have good ratings in terms of clarity to the participants. Furthermore, one item (self-blame) was added to the B-COPE because it had been used in other coping measures and was found to be a common coping strategy (Carver, 1997). To collect reliability information, the assessment was administered at three and six months after a significantly stressful event, with follow-up assessments six months later and again one year after the initial assessment. The scale was found to have test-retest reliability from the six month to the one-year assessment.

The B-COPE includes 28 items and 14 scales, with two items per scale. The scales are the different coping strategies identified to be most used, which are active coping, planning, positive reframing, acceptance, humor, religions, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. The items are numbered on a scale from one to four indicating how often an individual participates in each type of coping. A "one" indicates, "I usually don't do this at all", while a "four" indicates, "I do this a lot." Scores for each strategy are calculated by adding the scores together from the two items. There is no overall coping scale because each scale is independent and should be examined independently. These coping responses (with their alpha levels) are active coping (0.68), planning (0.73), positive reframing (0.64), acceptance (0.57), humor (0.73), religion (0.82), using emotional support (0.71), using instrumental support (0.64),

self-distraction (0.71), denial (0.54), venting (0.50), substance use (0.90), behavioral disengagement (0.65), and self-blame (0.69) (Carver, 1997). These fourteen coping strategies were divided into approach and avoidance coping strategies by the items and whether the strategy focused on the stressor or not. The seven approach coping strategies are active, seeking emotional support, seeking instrumental support, positive reframing, planning, acceptance, and religion. The seven avoidance coping strategies are self-distraction, denial, substance use, behavioral disengagement, venting, humor, and self-blame.

Procedure

The investigator contacted coaches at UNC Greensboro and other colleges and universities around the Triad area as well as club team presidents and captains for team interest in participation in this study. Participants first read and sign the informed consent document. The measures were then distributed to participants. All participants completed the measures in the same order: demographic survey, SIAS, and then B-COPE.

Statistical Analysis

Descriptive statistics of the sample were conducted using the data gained from the demographic survey. To analyze the two hypotheses, Pearson correlational analysis was used to determine significant relationships between overall sport injury anxiety and coping strategies. For the exploratory analyses, Pearson correlational analysis was also used to observe the relationships between the subfactors of SIAS with the coping strategies in the BCOPE. MANOVAs were used to determine group differences in the

SIAS and BCOPE based on gender, high injury risk vs. low injury risk sport, and currently restricted vs. currently unrestricted. Pearson correlational analysis was conducted to identify significant relationships between the perceived likelihood of future injury question and the SIAS and BCOPE.

CHAPTER IV

RESULTS

In regards to the questions about injury on the demographic survey, it appears that the sample was fairly neutral in their anxiety about a previous injury (*M*= 2.72), perceived severity of previous injury (*M*= 2.89), and likelihood of future injury (*M*= 2.60). Means, standard deviations, and ranges for scores on the SIAS and BCOPE are provided in Tables 2 and 3, respectively.

Primary Findings

The results partially supported the first hypothesis that sport injury anxiety would be positively associated with avoidance coping strategies. Overall sport injury anxiety was significantly correlated with the avoidance coping strategies of self-distraction (r= .20, $p < .05$) and self-blame (r= .23, $p < .05$). The Pearson correlation (r) values are displayed in Table 4. However, the second hypothesis that overall sport injury anxiety would be negatively correlated with approach coping strategies was not supported for any of the coping strategies.

In regards to the SIAS, it appears that this sample had fairly neutral or low levels of sport injury anxiety compared to the highest score possible. Additionally, there was low variability among the scores, demonstrating that athletes tended to respond fairly similarly. However, these means are similar to a previous study on sport injury anxiety in college athletes (Cassidy, 2006a). Of additional interest, the means of the approach

factors on the BCOPE appear to be higher than the means for the avoidance factors. Additionally, it is of note that the mean for self-distraction is higher than the means of the rest of the avoidance coping strategies and it was significantly related to overall sport injury anxiety. The significant correlations are close to moderate in terms of effect size, while the majority of the correlations are non-significant and quite low.

Table 2

Descriptive Statistics for SIAS

Sport Injury Anxiety	M	SD	Min	Max
Overall	2.30	0.75	1.00	4.00
Loss of Athleticism	2.48	1.09	1.00	4.60
Perceived as Weak	2.05	0.92	1.00	4.25
Experiencing Pain	2.69	1.00	1.00	4.50
Loss of Social Support	2.06	0.87	1.00	5.00
Reinjury	2.35	0.96	1.00	4.75
Letting Down Others	2.10	0.90	1.00	4.50
Impaired Self-Image	2.23	0.90	1.00	4.50

Table 3

Descriptive Statistics for the BCOPE

BCOPE Factor	M	SD
Avoidance Coping Strategy		
Self-Distraction	5.35	1.60
Denial	3.26	1.16
Substance Use	2.65	1.28
Behavioral Disengagement	2.79	1.04
Venting	3.85	1.41
Humor	4.74	1.76
Self-Blame	4.16	1.72
Approach Coping Strategy		
Active Coping	6.01	1.64
Emotional Support	4.97	1.67
Instrumental Support	5.32	1.75
Positive Reframing	5.45	1.74
Planning	5.47	1.71
Acceptance	5.15	1.67
Religion	4.61	2.10

Table 4

Total SIAS Correlations with Factors of BCOPE

BCOPE Factor	*r*- value
Avoidance Coping Strategy	
Self-Distraction	0.20*
Denial	0.04
Substance Use	0.00
Behavioral Disengagement	0.12
Venting	0.09
Humor	0.09
Self-Blame	0.23*
Approach Coping Strategy	
Active	0.02
Seeking Emotional Support	-0.01
Seeking Instrumental Support	-0.01
Positive Reframing	0.08
Planning	0.09
Acceptance	-0.14
Religion	-0.17

Note: *$p < .05$, two-tailed; **$p < .01$, two-tailed

Follow-Up Analyses

Because a few significant correlations and weak trends were found between overall SIA and coping strategies, it was decided to conduct follow up analyses with all the factors of the SIAS to determine if the subfactors of SIA were correlated with individual coping strategies.

SIAS subfactors and BCOPE. A follow-up analysis was completed to identify significant correlations between the subfactors of sport injury anxiety with the factors of the B-COPE. The nature of the relationships was of interest, because the majority of the avoidance factors showed positive correlations with SIA, while the approach factors demonstrated inverse relationships with SIA. Specifically, significant positive correlations with avoidance coping strategies were found with three of the subfactors of the SIAS. Loss of athleticism (r= .22, p < .05) and reinjury (r= .29, p < .05) were positively related to self-distraction. Impaired self-image was positively associated with denial (r= .22, p < .05), behavioral disengagement (r= .26, p < .05), and self-blame (r= .28, p < .01). Letting down important others was positively related to self-blame (r= .23, p < .05). Pearson correlation values related to avoidance coping strategies are displayed in Table 5. These significant correlations show a nearly moderate or moderate effect size, while the non-significant correlations have very low effects.

Significant inverse correlations with approach coping strategies were found with four subfactors of the SIAS. Experiencing pain (r= -.21, p < .05), loss of social support (r= -.22, p < .05), and reinjury (r= -.22, p < .05) were negatively correlated with religion. Letting down important others was negatively related to seeking emotional support (r= -

.21, $p < .05$). Pearson correlations (r) values related to approach coping strategies are shown in Table 6. These correlations demonstrate a nearly moderate effect size.

Table 5

Sport Injury Anxiety Scale Subfactors Correlations with Avoidance Factors of BCOPE

BCOPE Factor	Loss of Athleticism	Perceived as Weak	Experiencing Pain	Loss of Social Support	Reinjury	Letting Down Others	Impaired Self-Image
Self-Distraction	0.22*	0.16	0.09	0.15	0.29**	0.04	0.17
Denial	-0.08	-0.07	-0.01	0.00	0.06	0.00	0.22*
Substance Use	0.01	-0.04	0.05	-0.11	0.08	-0.13	0.18
Behavioral Disengagement	-0.04	0.08	0.14	0.17	0.18	0.06	0.26*
Venting	0.04	0.13	0.14	-0.01	0.11	-0.03	0.09
Humor	0.05	0.00	0.06	0.08	0.17	0.03	0.02
Self-Blame	0.20	0.20	0.06	0.15	0.16	0.23*	0.28**

Note. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 6

Sport Injury Anxiety Score Subfactors Correlations with Approach Factors of BCOPE

BCOPE Factor	Loss of Athleticism	Perceived as Weak	Experiencing Pain	Loss of Social Support	Reinjury	Letting Down Others	Impaired Self-Image
Active	0.15	0.06	0.00	-0.08	0.01	-0.05	-0.01
Seeking Emotional Support	-0.01	0.02	-0.10	-0.14	-0.09	-0.21*	-0.12
Seeking Instrumental Support	0.09	0.06	-0.02	-0.09	0.03	-0.14	-0.04
Positive Reframing	0.18	0.13	0.05	-0.01	0.10	0.02	0.04
Planning	0.19	0.13	0.03	0.04	0.10	0.03	-0.01
Acceptance	-0.14	-0.01	-0.13	-0.16	-0.11	-0.11	-0.12
Religion	-0.16	-0.12	-0.21*	-0.22*	-0.22*	-0.04	-0.08

Note. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Exploratory Analyses

Gender. While the sample sizes for gender were very unequal, the standard deviations between the groups for each factor were fairly close, thus analysis of variance could be used to compare group differences. Both genders tended to display higher means on the approach coping strategies, but there did not appear to be a trend of one gender group using approach or avoidance strategies more often than the other gender group. However, females tended to display higher means on the SIAS compared to males. A MANOVA indicated that there were no significant differences for the SIAS subfactors, $F(7,91)= 1.65$, $p > .05$. However, significant differences were found in gender on overall SIA, $F(1,97)= 8.34$, $p < .05$. Additionally, MANOVA yielded a significant difference on the BCOPE as a function of gender, $F(14,80)= 2.21$, $p < .05$. Univariate analysis indicated that women reported significantly higher scores than men on the BCOPE factor of self-distraction, $F(14,80)= 5.78$, $p < .05$, with an effect size of 0.70. Means and standard deviations for BCOPE factors are shown in Table 7 and means and standard deviations for SIAS factors are shown in Table 8.

High injury risk vs. low injury risk. The sample sizes for injury risk were fairly even between the high injury risk (n=55) and low injury risk (n=44) sports. There was a trend that athletes in the lower injury risk sports displayed higher means on the sport injury anxiety subfactors as compared to the higher injury risk sport athletes. Additionally, the higher injury risk sport athletes tended to display higher means on the approach coping strategies as compared to the low injury risk sport athletes. However, no significant differences were observed in the overall SIAS, $F(1,97)= 0.78$, $p > .05$, or

any of its subfactors F(7,91)= .39, $p < .05$, as a function of the sport being high injury risk or low injury risk. No significant differences were found in the BCOPE factors, F(14,80)= 1.49, $p < .05$. Means and standard deviations for BCOPE factors are shown in Table 9 and means and standard deviations for SIAS factors are shown in Table 10.

Restricted vs. unrestricted. While the sample size for the restricted (n=15) and unrestricted (n=84) were very uneven, the standard deviations for the two samples for each of the factors were fairly close, thus justifying the use of analysis of variance. It is of interest to note that the unrestricted athletes, those who could participate in their sport without modification, displayed higher means on the approach coping strategies as compared to the restricted athletes. The restricted athletes, those who were currently unable to participate in their sport without modification, reported higher means on the sport injury anxiety subfactors. However, no significant differences between restricted and unrestricted athletes were found on overall, F(1,97)= 1.38, $p > .05$, or any factors of the SIAS, F(7,91)= 0.60, $p > .05$. In regards to the BCOPE, no significant differences were found between restricted and unrestricted athletes, F(14,80)= 1.73, $p > .05$. Means and standard deviations for BCOPE factors are shown in Table 11 and means and standard deviations for SIAS factors are shown in Table 12.

Table 7

Means and Standard Deviations for BCOPE Factors as a Function of Gender

BCOPE Factor	Men (n=84)		Women (n=15)		
	M	SD	M	SD	ES
Avoidance Coping Strategy					
Self-Distraction	5.18*	1.55	6.27*	1.62	-0.70
Denial	3.30	1.19	3.07	0.96	0.20
Substance Use	2.67	1.32	2.53	1.13	0.11
Behavioral Disengagement	2.80	1.06	2.73	0.96	0.07
Venting	3.78	1.44	4.27	1.16	-0.35
Humor	4.67	1.72	5.13	1.96	-0.26
Self-Blame	4.27	1.77	3.60	1.30	0.39
Approach Coping Strategy					
Active Coping	6.00	1.69	6.07	1.34	-0.04
Emotional Support	4.89	1.71	5.40	1.40	-0.31
Instrumental Support	5.27	1.76	5.60	1.72	-0.19
Positive Reframing	5.45	1.79	5.47	1.51	-0.01
Planning	5.56	1.77	5.00	1.25	0.33
Acceptance	5.21	1.67	4.80	1.70	0.24
Religion	4.74	2.10	3.93	2.09	0.39

Note: ES=Cohen's d = $(M_{men} - M_{women})/SD_{pooled}$

Table 8

Means and Standard Deviations for SIAS Factors as a Function of Gender

SIAS Factor	Men (n=84)		Women (n=15)		
	M	SD	M	SD	ES
Overall Score	2.21*	0.74	2.80*	0.64	-0.81
Loss of Athleticism	2.37	1.10	3.09	0.83	-0.68
Perceived as Weak	1.99	0.90	2.42	0.98	-0.47
Experiencing Pain	2.59	0.97	3.30	0.98	-0.73
Loss of Social Support	1.98	0.80	2.50	1.10	-0.61
Reinjury	2.22	0.92	3.08	0.89	-0.94
Letting Down Others	2.01	0.88	2.55	0.91	-0.61
Impaired Self-Image	2.17	0.90	2.55	0.83	-0.43

Note: ES=Cohen's d = $(M_{men} - M_{women})/SD_{poole}$

Table 9

Means and Standard Deviations of BCOPE Factors as a Function of Injury Risk Level

BCOPE Factor	High injury risk (n=54)		Low injury risk (n=44)		
	M	SD	M	SD	ES
Avoidance Coping Strategy					
Self-Distraction	5.44	1.30	5.23	1.92	0.13
Denial	3.31	1.09	3.20	1.25	0.09
Substance Use	2.42	1.03	2.95	1.51	-0.42
Behavioral Disengagement	2.89	1.08	2.67	0.99	0.21
Venting	3.69	1.38	4.07	1.42	-0.27
Humor	4.78	1.70	4.70	1.85	0.05
Self-Blame	4.26	1.65	4.05	1.81	0.12
Approach Coping Strategy					
Active Coping	6.31	1.45	5.64	1.79	0.42
Emotional Support	5.11	1.68	4.79	1.67	0.19
Instrumental Support	5.44	1.67	5.16	1.86	0.16
Positive Reframing	5.81	1.51	5.00	1.93	0.47
Planning	5.91	1.50	4.93	1.82	0.59
Acceptance	5.31	1.54	4.93	1.83	0.23
Religion	4.76	2.09	4.43	2.13	0.16

Note: ES=Cohen's d = $(M_{\text{high risk}} - M_{\text{low risk}})/SD_{\text{pooled}}$

Table 10

Means and Standard Deviations for SIAS Factors as a Function of Injury Risk Level

SIAS Factor	High injury risk (n=54)		Low injury risk (n=44)		
	M	SD	M	SD	ES
Overall Score	2.24	0.72	2.38	0.79	-0.19
Loss of Athleticism	2.43	1.08	2.54	1.12	-0.10
Perceived as Weak	2.04	0.92	2.08	0.93	-0.04
Experiencing Pain	2.66	0.96	2.73	1.05	-0.07
Loss of Social Support	1.98	0.84	2.15	0.91	-0.20
Reinjury	2.25	0.90	2.48	1.03	-0.24
Letting Down Others	2.03	0.91	2.18	0.89	-0.17
Impaired Self-Image	2.16	0.91	2.31	0.88	-0.17

Note: ES=Cohen's d = $(M_{\text{high risk}} - M_{\text{low risk}})/SD_{\text{poole}}$

Table 11

Means and Standard Deviations for BCOPE Factors as a Function of Restriction Level

BCOPE Factor	Unrestricted (n=84)		Restricted (n=15)		
	M	SD	M	SD	ES
Avoidance Coping Strategy					
Self-Distraction	5.43	1.59	4.87	1.60	0.35
Denial	3.24	1.18	3.40	1.06	-0.14
Substance Use	2.66	1.32	2.60	1.12	0.05
Behavioral Disengagement	2.71	0.99	3.27	1.22	-0.55
Venting	4.01	1.42	3.00	1.00	0.74
Humor	4.90	1.75	3.87	1.60	0.60
Self-Blame	4.15	1.70	4.27	1.87	-0.07
Approach Coping Strategy					
Active Coping	6.12	1.59	5.40	1.80	0.44
Emotional Support	5.09	1.66	4.33	1.68	0.46
Instrumental Support	5.46	1.69	4.53	1.92	0.54
Positive Reframing	5.59	1.67	4.73	2.02	0.50
Planning	5.54	1.66	5.13	2.00	0.24
Acceptance	5.33	1.64	4.13	1.55	0.74
Religion	4.73	2.09	4.00	2.14	0.35

Note: ES=Cohen's d = $(M_{\text{unrestricted}} - M_{\text{restricted}})/SD_{\text{pooled}}$

Table 12

Means and Standard Deviations for SIAS Factors as a Function of Restriction Level

SIAS Factor	Unrestricted (n=84)		Restricted (n=15)		
	M	SD	M	SD	ES
Overall Score	2.26	0.77	2.51	0.59	-0.33
Loss of Athleticism	2.46	1.12	2.60	0.92	-0.13
Perceived as Weak	1.99	0.91	2.38	0.95	-0.43
Experiencing Pain	2.65	1.03	2.93	0.78	-0.28
Loss of Social Support	2.01	0.90	2.32	0.67	-0.36
Reinjury	2.32	0.97	2.55	0.94	-0.24
Letting Down Others	2.04	0.91	2.38	0.85	-0.38
Impaired Self-Image	2.20	0.90	2.42	0.86	-0.25

Note: ES=Cohen's d = $(M_{\text{unrestricted}} - M_{\text{restricted}})/SD_{\text{poole}}$

Perceived likelihood of future injury. Significant correlations were found between perceived likelihood of future injury and overall SIA, six subfactors of SIA, and six coping strategies on the BCOPE. The correlations between perceived likelihood of future injury and the BCOPE were moderate, while the correlations between perceived likelihood of future injury and the SIAS were moderate to high. This demonstrates a strong relationship, showing that athletes who perceived that they were more likely to become injured while participating in their sport, tended to utilize more avoidance coping strategies and had higher levels of anxiety. In regards to the SIAS, perceived likelihood of future injury was positively correlated with overall SIA (r= .38, p < .01), loss of athleticism (r= .28, p < .01), perceived as weak (r= .35, p < .01), experiencing pain (r= .43 p < .01), loss of social support (r= .27, p < .01), re-injury (r= .49, p < .01), and letting down important others (r= .28, p < .01). With the BCOPE, perceived likelihood of future injury was positively correlated with self-distraction (r= .21, p < .05), substance use (r= .27, p < .05), behavioral disengagement (r= .30, p < .01), venting (r= .23, p < .05), and humor (r= .24, p < .05), while inversely correlated with religion (r= -.29, p < .01). Pearson correlation (r) values for BCOPE factors are shown in Table 13 and correlation (r) values for the SIAS factors are shown in Table 14.

Table 13

Perceived Likelihood of Future Injury Correlations with BCOPE

BCOPE Factor	*r*- value
Avoidance Coping Strategy	
Self-Distraction	0.21*
Denial	0.07
Substance Use	0.27**
Behavioral Disengagement	0.30**
Venting	0.23*
Humor	0.24*
Self-Blame	0.03
Approach Coping Strategy	
Active Coping	-0.01
Emotional Support	-0.02
Instrumental Support	-0.01
Positive Reframing	-0.03
Planning	-0.05
Acceptance	-0.02
Religion	-0.29*

Note. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

Table 14

Perceived Likelihood of Future Injury Correlations with SIAS

SIAS Factor	*r*- value
Overall Score	0.38**
Loss of Athleticism	0.28**
Perceived as Weak	0.35**
Experiencing Pain	0.43**
Loss of Social Support	0.27**
Reinjury	0.49**
Letting Down Others	0.28**
Impaired Self-Image	0.1

Note. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

CHAPTER V

DISCUSSION

Preliminary Analyses

The results partially supported the hypothesis that sport injury anxiety would be positively associated with avoidance coping strategies. It was demonstrated that sport injury anxiety was positively associated with the avoidance coping strategies of self-distraction and self-blame. Athletes with higher levels of sport injury anxiety may utilize self-distraction and focus their minds on other things because they cannot handle thinking about the potential harm that could result from sustaining an injury (Gross, 1999). Self-blame could be positively correlated with sport injury anxiety because athletes with high sport-related anxiety have been found to use avoidance coping strategies, specifically self-blame, more consistently than athletes with low sport-related anxiety (Giacobbi & Weinberg, 2000). While these avoidance coping strategies could be beneficial in the short-term, it is possible that consistently using avoidance coping strategies could maintain higher anxiety levels over the long-term. Research has suggested a beneficial immediate outcome of using avoidance coping in sport participation, however, there may be negative long-term outcomes. If an athlete does not confront the stressor, the issue may be likely to come back and once again increase the athlete's anxiety. It is possible that the athlete could become trapped in a cycle of alleviating the stressor and then

having the stressor resurface. Without directly addressing and ameliorating the stressor, it may continue causing long-term anxiety (Kim & Duda, 2003).

While overall SIA was found to be positively correlated with avoidance coping, it was not related with all of the avoidance coping factors. This could be due to the nature of being a collegiate, varsity athlete and the options of avoidance coping strategies available on the BCOPE. For example, substance use had the lowest levels with SIA, possibly because athletes know there would be devastating consequences if they were to be caught with alcohol or drugs. Behavioral disengagement may also produce significant adverse consequences, such as losing a scholarship if the athlete is not actively practicing. It may not be worth the risks to use either of those coping strategies to alleviate SIA if it would cause other serious consequences. Additionally, at the collegiate level most athletes have experienced some type of injury. Therefore, trying to utilize denial as a coping strategy may not yield successful results in alleviating SIA because they already understand the inherent risks involved with sport participation. Hence, these non-significant correlations likely indicate that not all avoidance coping strategies are used equally. While coping strategies can be loosely grouped together, it is still important to examine the strategies individually to understand how/when they are used and then to determine their effectiveness.

The hypothesis that overall sport injury anxiety would be negatively correlated with approach coping strategies was not supported on any of the approach coping strategies. It is possible that the nature of individual differences in coping strategies could have been a factor in the non-significant results (Roth & Cohen, 1986). Research

has suggested that individuals have dispositional coping strategies, meaning they cope with a variety of situations in the same way. Certain individual or personality characteristics could elicit certain coping strategies, regardless of the situation (Carver et al., 1989). However, when examining the direction of the correlations, the majority of the approach coping strategies were inversely related to SIA, although the relationship was not significant. Still, there seems to be a fairly consistent direction of the relationship between approach coping and anxiety. Additionally, when looking at the means of the BCOPE factors, it was shown that the strategies with the highest means were among the approach coping strategies. This demonstrates a trend that these athletes tended to utilize approach coping strategies over avoidance coping strategies. Approach coping strategies have been suggested to be a more adaptive coping style with athletes (Giacobbi & Weinberg, 2004; Eubanks & Collins, 2000).

Follow-up analyses

Because of some significant correlations between avoidance and overall sport injury anxiety, follow-up analyses were conducted to determine any correlations among avoidance and approach coping strategies with the subfactors of sport injury anxiety.

SIAS factors and BCOPE. Significant relationships were found between subfactors of the SIAS and BCOPE. Four of the SIAS subfactors were positively associated with four of the avoidance coping strategies and inversely related with two approach coping strategies. These findings are of interest, because the direction of the relationships is consistent, demonstrating that anxiety is positively related to avoidance coping and inversely related to approach coping. Approach coping strategies have been

suggested to be more effective in the long-term, which could explain why they were inversely related to anxiety (Kim & Duda, 2003).

Similar to overall SIA, self-distraction was associated with the subfactors of anxiety related to loss of athleticism and experiencing reinjury, while self-blame was positively correlated to anxieties related to letting down important others and having an impaired self-image. Because both self-distraction and self-blame were related to overall SIA, it makes sense that they would also be related with some of the subfactors. In regards to loss of athleticism, athletes may not want to think of the possibility that their performance could decrease due to an injury. If an injury hinders their athletic performance, they could be at risk for losing a starting position on the team. Anxiety about reinjury could elicit more self-distraction because the athlete may feel like there is nothing s/he can do to prevent another injury. Because injury is an inherent risk in sport, athletes with anxiety about reinjury may see the situation as less controllable and try to distract themselves from the possibility of a subsequent injury (Anshel & Sutarso, 2007).

The positive relationship between self-blame and anxiety related to letting down important others could potentially be due to feelings of pressure or guilt from not performing to others' expectations. For example, if athletes believe coaches expected a high-level of performance, athletes may feel responsible for letting their coach down if they are unable to perform well due to their anxiety. This could result in higher levels of self-blame. Additionally, impaired self-image was found to be positively related to self-blame, denial, and behavioral disengagement, which was different than the findings from overall sport injury anxiety. Self-blame could be related to impaired self-image because

athletes may believe it is their fault they sustained an injury, thus also placing the blame of any related bodily changes upon themselves. For example, an athlete who perceives that an injury is in her control may feel more self-blame if she does become injured because she may believe that it could have been prevented. Denial may be utilized because the athlete does not want to think that adverse consequences could occur. Impaired self-image may be related to behavioral disengagement because athletes may believe there is nothing they can specifically do to prevent potential impairments and thus give up trying. It is interesting that impaired self-image was related to three avoidance coping strategies and was significantly related to more avoidance coping strategies than any other subfactor. Collegiate athletes may be sensitive about their body image, which could be impaired if they were to sustain an injury and unable to participate in their sport. Therefore, anxiety could be increased which may elicit more avoidance coping in attempts to alleviate their concerns.

It was also found that the approach coping strategy of seeking emotional support was inversely correlated with the anxiety of letting down important others. If athletes are anxious about letting down important others, they may not feel comfortable discussing their emotions with those individuals. Particularly, if athletes are concerned about letting their coaches or teammates down they may not want to appear emotionally weak, thus avoiding confronting the issue. The approach coping strategy of using religion was inversely associated with the anxieties of experiencing pain, losing social support, and experiencing reinjury. In regards to the approach strategy of turning to religion, Kim and Duda (2003) found that athletes tended to use religion as a coping strategy when they

experienced psychological stress and that approach coping strategies were deemed as more effective in long-term outcomes. Therefore, athletes who reported higher scores on using religion tended to have lower anxiety scores related to experiencing pain, loss of social support, and reinjury, possibly because it has been found to be an effective coping strategy.

These findings indicate that it is important to identify what adverse consequence of an injury may be most salient to an athlete. For example, the data from this sample indicated that an athlete may be low overall on sport injury anxiety, but high on a specific subfactor. By observationally examining the raw scores, it was found that some participants had an overall SIA score between two and three, which represents low to neutral overall SIA, but one or two subscores that were between four and five, indicating high to very high SIA on those particular subfactors. In order to help alleviate anxiety, it may be necessary to understand the source of the athlete's anxiety (Cassidy, 2006b).

There are many findings in related literature that can help to explain why a sport injury anxiety was found to be positively related to avoidance coping and inversely related to approach coping (Albison & Petrie, 2003; Carver, Scheier, & Weintraub, 1989; Roth & Cohen, 1986). Research has demonstrated that when athletes have a negative appraisal of a situation, they are more likely to use avoidance coping strategies (Albison & Petrie, 2003; Anshel & Delany, 2001). These negative appraisals can be identified as harm or threat appraisals. Harm appraisals refer to being concerned about a loss or damage that had previously occurred, such as an injury. Threat appraisals are worries about a harm or loss that has the potential to occur (Albison & Petrie, 2003; Anshel et al.,

2001). For example, anxiety about reinjury could be defined as a harm appraisal because the athlete is worried he or she will incur a subsequent bodily injury. Thus, it would provide reason for the positive relationship between anxiety about reinjury and avoidance coping. The subfactors loss of athleticism, letting down important others, and impaired self-image could be seen as threat appraisals. The athlete may have not experienced harm to their athletic ability, important relationships, or self-image in the past, but an injury could pose a serious threat to these factors. The positive correlation of loss of athleticism, loss of social support, and impaired self-image with avoidance coping could result from these negative appraisals.

Trait anxiety has also been shown to be inversely related with approach coping strategies, which could also help explain the relationships observed in this study (Carver, Scheier, & Weintraub, 1989; Giacobbi & Weinberg, 2004). Because sport injury anxiety has been defined as a trait anxiety (Cassidy, 2006a; Kleinert, 2002), athletes with higher levels of sport injury anxiety could be more likely to display avoidance coping rather than approach coping.

Finally, previous literature has suggested that when a situation is perceived as less controllable, individuals tend to use avoidance coping. Some researchers argue that utilizing avoidance coping in these situations may be beneficial. If there is nothing that can be done to specifically alleviate the threat, it may be more appropriate to forget about it and focus on something else (Anshel & Sutarso, 2007; Roth & Cohen, 1986). Sport injury is, realistically, mostly out of athletes' control and is an inherent risk while

participating in sport, which may explain the positive correlations found between avoidance coping strategies and anxiety about sustaining an injury in this study.

Exploratory analyses

While these analyses were not the primary purpose of the study, the correlations between the subfactors of the SIAS and the BCOPE and comparisons between various demographic variables were of interest, because there has not been much research on sport injury anxiety. These demographic variables were examined to gain more insight into potential risk factors of sport injury anxiety and coping strategies.

Gender. When examining group differences, a significant difference was found on overall SIA, but no significant differences were found on subfactors of SIA in regards to gender. This finding is interesting because the women had higher means on overall SIA and every subfactor of SIA. Additionally, previous research has demonstrated a gender difference in SIA. However, the literature is contradictory. Cassidy (2008) found that women tended to display less SIA than men on the subfactors of being perceived as weak, impaired self-image, reinjury, and experiencing pain. However, Cassidy (2006a) found that women reported higher levels of overall SIA, anxiety related to being perceived as weak, reinjury, experiencing pain, and impaired self-image. Previous general anxiety research has shown that women tend to show higher levels of anxiety than men (Feingold, 1994). Additionally, literature suggests that women tend to report more body image dissatisfaction than men, which could be related to women's higher scores on anxieties related to impaired self-image (Coakley, 2004; Furnham & Greaves, 1994). Because previous research has found gender differences in anxiety, it is possible

that the lack of statistical significant results in this study was due to the unequal sample sizes between men (n=84) and women (n=15), which could impact the statistical power of the test.

Literature on gender differences in coping and sport have not specifically looked at sport injury anxiety and have not taken into account the nature of the stressor (Nicholls & Polman, 2007). However, there is some evidence that women tend to use more emotion-focused coping (Goyen & Anshel, 1998; Yoo, 2001) and one study found that women used more social support, venting, and dissociation than men (Hammermeister & Burton, 2004). While social support and venting were not found to be statistically significant in this study, the means for women on these factors tended to be higher than the men's. However, dissociation could be viewed similarly to self-distraction, because the individual is attempting to cognitively remove him or herself from the anxiety-provoking situation. This could provide rationale as to why women reported significantly higher scores on self-distraction than men.

High injury risk vs. low injury risk. There were no significant differences found on the SIAS between high injury risk and low injury risk sports, which is contrary to previous research showing that athletes in higher injury risk sports (high injury risk sports) displayed higher levels of anxiety related to experiencing pain (Cassidy, 2006a). However, there was a trend that athletes in low injury risk sports displayed slightly higher means on all the SIAS components, which would be contrary to the findings that athletes in high risk sports report more sport injury anxiety. This could be due to the fact that all the women were in the low injury risk sports and tended to have higher means on the

SIAS, which could have increased the means in regards to low injury risk sports. Future research with larger samples will be necessary to further test this hypothesis. There were also no significant differences on avoidant or approach coping factors between athletes in high injury risk and low injury risk sports. However, when observing the means, athletes in high injury risk sport tended to use more approach coping strategies, such as active coping, positive reframing, and planning. It appears that research in coping has not specifically looked at sport-type variables as they relate to coping strategies.

Restricted vs. unrestricted. Because there were no significant differences between restricted athletes (n=15) and unrestricted athletes (n=84) on any of the SIAS factors, this study demonstrated that both groups of athletes who were able and unable to fully participate in their sport experienced similar levels of SIA. This finding provides justification for including this group of individuals in the main analyses. Previous research had not examined if impaired full sport participation significantly affected SIA and coping strategies (Cassidy, 2006a). It is possible that different coping strategies could be utilized when athletes are still able to play versus if they are forced to sit on the sidelines. However, this study demonstrated that SIA levels and utilized coping strategies were not significantly different between the two groups, thus both groups can be analyzed together.

Perceived likelihood of future injury. There were strong positive correlations between perceived likelihood of future injury and overall SIA and six subfactors of SIA. Perceived likelihood of injury was also positively correlated with five avoidance coping strategies. This demonstrates that if athletes think they could get injured during their

sport participation, they are more likely to experience increased levels of anxiety, which could be related to using avoidance coping strategies.

This belief that an injury is very likely to occur could affect how the athlete cognitively appraises situations in which injury is likely to occur. If there are high expectations for injury, the athlete identifies that the situation could be harmful. When attempting to identify coping resources, the athlete may feel that s/he does not have the capability to prevent any harm. If an athlete perceives that s/he is more likely to become injured while participating in sport, s/he may interpret the feeling as having less control over the situation. When individuals feel that they do not have control over a situation, anxiety levels tend to increase. As mentioned earlier, previous literature suggests that when athletes encounter a stressor perceived to be less controllable, they tend to use avoidance coping strategies (Anshel, 1996; Carver et al., 1989). This could explain why perceived likelihood of future injury was positively related to avoidance coping strategies.

If an athlete does not believe s/he is going to be injured while playing, it seems unlikely that s/he would experience any anxiety about sustaining an injury. This belief that injuries are unlikely could stem from the use of approach coping strategies, because the athlete feels they have taken the necessary precautions to prevent an injury from occurring. To gain more of an insight into these findings, it may have been beneficial to add questions that stated, "Are you worried about getting injured while playing your sport?" and "Do you feel that you can prevent becoming injured while participating in your sport?". These questions could investigate athletes' conscious beliefs about their

anxiety about sport injury and their perceived control over sustaining injuries, which could have mediated the relationship between the SIAS and BCOPE.

Limitations

A potential limitation of this study could be due to the vague description on the directions. The directions did not specify the participant to imagine a situation in which they could get injured, but rather just asked their beliefs about injury. Athletes could have been thinking about previous, non-severe injuries, which could have resulted in reporting less sport injury anxiety (Cassidy, 2008). The instructions could have specifically asked how athletes *would* feel about each statement *if* they were to sustain an injury. Using an individual sport specific imagery script of a situation where injury seems likely may have been helpful to put the athletes in the state of mind of being in a situation where they could get injured (Mullen, Lane, & Hanton, 2009). This could have also helped the athletes focus on completing the questionnaires, because it was observed by the investigator that some athletes were talking and joking around while completing the surveys. The investigator gave verbal instructions to complete the surveys individually and respond honestly, however, some participants made comments to their teammates about certain questions. This may have resulted in some athletes not responding honestly about the extent to which they agreed with the statements on the SIAS or the BCOPE.

Future Directions

It would be beneficial to extend the research to determine the effect SIA and subsequent coping strategies have on athletic performance (Anshel & Sutarso, 2007).

Since significant relationships between avoidance coping strategies and specific subfactors of sport injury anxiety were found, an area for future research would be to create a longitudinal study to investigate if these avoidant coping strategies affected the athletes' performances (Folkman et al., 1986). It is possible that a coping strategy could alleviate SIA, but be detrimental to performance. For example, if an athlete were to utilize self-distraction to get his or her mind off of the anxiety, s/he may feel relief from anxiety, but could be focusing on other unproductive cues not pertinent to enhancing sport performance. Tracking and identifying outcomes of these avoidance and approach coping strategies could provide more insight into which coping strategy may be most beneficial to successfully alleviate SIA without adversely affecting sport performance.

Additionally, it may be beneficial to see what variables mediate or moderate the relationship between SIA and coping strategies. Previous research has suggested that coping may be related to personality (Carver, Scheier, & Weintraub, 1989) and self-confidence could be a potential moderator in regards to preferred coping strategies (Hardy, 2002). As previously mentioned, gaining insight into athletes' beliefs of control over situations in which there is the potential of injury could help identify a link between SIA and coping strategies.

Conclusions

This study helped to gain further insight into sport injury anxiety and related coping strategies used by collegiate athletes. The main findings of this study were that overall sport injury anxiety was positively associated with the avoidance coping strategies of self-distraction and self-blame, and subfactors of sport injury anxiety were

also positively associated with avoidance coping and inversely related to approach coping strategies. This demonstrates that it is important to not just examine the overall sport injury anxiety score, but rather identify what adverse consequence of an injury is most salient to an athlete. While approach coping strategies are typically seen as the most facilitative to performance (Anshel et al., 2001; Eubanks & Collins, 2000; Ntoumanis & Biddle, 2000), it is possible that in dealing with sport injury anxiety, avoidance coping may be a more adaptive approach (Anshel, 2001; Giaccobi et al., 2004). More research is needed to examine performance outcomes of athletes who utilize avoidance verses approach coping strategies to deal with sport injury anxiety.

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APPENDIX A

CONSENT FORM

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT: LONG FORM

Project Title: The relationship between coping and sport injury anxiety among college athletes.

Principal Investigator: Dr. Jennifer Etnier, PhD
Student Researcher: Jenna Tomalski

Participant's Name: _____

What is the study about?
This is a thesis research project. The goal of this study is to examine the relationship between sport injury anxiety and various coping strategies.

Why are you asking me?
You are being asked to participate because you are involved in college athletics, either at the varsity or club level, and because you are at least 18 years of age.

What will you ask me to do if I agree to be in the study?
You will be asked to complete a demographic survey, a questionnaire that asks about your anxiety related to injury in sport, and a questionnaire that asks about how you cope with anxiety related to injury in sport.

Is there any audio/video recording?
There will be no video or audio recording during the testing session.

What are the dangers to me?
The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. Some of the questions ask about your mood; if you are struggling with stress, depression, or anxiety, you can contact the UNCG Counseling and Testing Center at (336) 334-5874.

If you have questions, want more information or have suggestions, please contact Dr. Jennifer Etnier at jletnier@uncg.edu. If you have any concerns about your rights, how you are being treated, concerns or complaints about this project or benefits or risks associated with being in this study please contact the Office of Research Compliance at UNCG toll-free at (855) 251-2351.

Are there any benefits to society as a result of me taking part in this research?

The results of this project may inform sport psychology consultants how college athletes usually cope with anxiety surrounding potentially sustaining an injury while participating in their sport.

Are there any benefits to *me* for taking part in this research study?
There are no direct benefits to participants in this study.

Will I get paid for being in the study? Will it cost me anything?
There are no costs to you or payments made for participating in this study.

How will you keep my information confidential?
All information obtained in this study is strictly confidential unless disclosure is required by law. Your name will only be on this consent form and will not be connected to the data. Data and consent forms will be stored separately in a secure file folder on the UNCG Campus in the Health and Human Performance Building, Room 239.

What if I want to leave the study?
You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?
If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:
By signing this consent form you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly willing consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate.

Signature: _____ Date: _____

APPENDIX B

DEMOGRAPHIC SURVEY

Age: _____ **Sex**: M F

Level of competition (circle one):

Collegiate Varsity Team Club Team

What is your primary sport? _____

In the past three years, how many times have you been injured that prevented you from participation in your sport for at least 1+ day(s)? _____

Are you currently able to participate in your sport without modifications or restrictions?

Yes No

When was your most recent injury that required you to miss at least one day of participation in your sport? (circle one)

< 2 weeks ago 2 weeks- 1 month ago 1-3 months ago

3-6 months ago 6 months ago- 1 year ago > 1 year ago

How anxious were you about your most recent injury? (circle one number)

1	2	3	4	5
Not anxious at all				Very anxious

On this scale, how severe do you think this injury was? (circle one number)

1	2	3	4	5
Not severe at all				Very severe

How likely are you to become injured playing your sport in the future? (circle one number)

1	2	3	4	5
Not likely at all				Very likely

APPENDIX C

SPORT INJURY ANXIETY SCALE

DIRECTIONS: A number of statements that athletes have used to describe their beliefs about injury are listed below. After reading each statement, please indicate how much you agree with the statement. If you have never been injured, please tell us what you think *might* happen if you were ever injured. We ask you to share your true beliefs with us. There are no right or wrong answers. Do not spend too much time on any one statement, but choose the answer that best describes what you believe. Some of the questions may seem repetitive, but please answer ALL questions. Neither your coach nor anyone other than the researcher will see your responses.

Response Set

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not Applicable
SD	**D**	**N**	**A**	**SA**	**NA**

When I am injured…

1. I am in a lot of pain.	SD	D	N	A	SA	NA
2. Some people think I am mentally weak.	SD	D	N	A	SA	NA
3. I am letting my coaches down.	SD	D	N	A	SA	NA
4. I feel anxious about how my body looks.	SD	D	N	A	SA	NA
5. I lose self-esteem.	SD	D	N	A	SA	NA
6. I experience throbbing pain.	SD	D	N	A	SA	NA
7. Some people turn away from me.	SD	D	N	A	SA	NA
8. I lose some social support.	SD	D	N	A	SA	NA
9. I hurt a lot.	SD	D	N	A	SA	NA
10. I am losing athletic ability.	SD	D	N	A	SA	NA
11. Some people stop calling.	SD	D	N	A	SA	NA
12. I lose my competitive advantage.	SD	D	N	A	SA	NA
13. I am anxious about how my body feels.	SD	D	N	A	SA	NA
14. I am letting my family down.	SD	D	N	A	SA	NA
15. I feel socially disconnected from my teammates.	SD	D	N	A	SA	NA

16. I lose some of my athletic skill. SD D N A SA NA
17. I doubt that I will be healthy in the future.
SD D N A SA NA
18. I lose the opportunity to improve in my sport.
SD D N A SA NA
19. I believe that I will get injured more easily in the future.
SD D N A SA NA
20. I am letting my teammates down. SD D N A SA NA
21. Some people just think I'm being a baby. SD D N A SA NA
22. I think that I am more likely to get injured again when I return.
SD D N A SA NA
23. I am letting my friends down. SD D N A SA NA
24. I experience a lot of physical discomfort. SD D N A SA NA
25. I am losing athletic potential. SD D N A SA NA
26. I worry about getting fat. SD D N A SA NA
27. Some people think I am just being lazy. SD D N A SA NA
28. I worry that the same injury will happen again.
SD D N A SA NA
29. Some people think I am faking it. SD D N A SA NA

APPENDIX D

BRIEF COPE

Directions: ***These items deal with ways you usually deal with the stress of potentially sustaining an injury while playing your sport***. There are many ways to try to deal with problems. These items ask what you usually do to cope with this stress. Obviously, different people deal with things in different ways, but I'm interested in how you usually deal with it. Each item says something about a particular way of coping. I want to know to what extent you usually do what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you usually do it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can. **Remember to answer according to how you usually deal with the anxiety associated with the potential of getting injured during your sport.**

1 = I usually don't do this at all
2 = I usually do this a little bit
3 = I usually do this a medium amount
4 = I usually do this a lot

1. I turn to work or other activities to take my mind off things.
2. I concentrate my efforts on doing something about the situation I'm in.
3. I say to myself "this isn't real.".
4. I use alcohol or other drugs to make myself feel better.
5. I get emotional support from others.
6. I give up trying to deal with it.
7. I take action to try to make the situation better.
8. I refuse to believe that it may happen.
9. I say things to let my unpleasant feelings escape.
10. I get help and advice from other people.
11. I use alcohol or other drugs to help me get through it.
12. I try to see it in a different light, to make it seem more positive.
13. I criticize myself.
14. I try to come up with a strategy about what to do.
15. I get comfort and understanding from someone.
16. I give up the attempt to cope.
17. I look for something good in what is happening.
18. I make jokes about it.
19. I do something to think about it less, such as going to movies, watching

TV, reading, daydreaming, sleeping, or shopping.

20. I accept the reality of the fact that it may happen.
21. I express my negative feelings.
22. I try to find comfort in my religion or spiritual beliefs.
23. I try to get advice or help from other people about what to do.
24. I learn to live with it.
25. I think hard about what steps to take.
26. I blame myself for things that may happen.
27. I pray or meditate.
28. I make fun of the situation.