Exploring Psycho-Emotional Response to Athletic Injury, Rehabilitation, and Readiness to Return in NCAA Division II Collegiate Athletes

By

Miranda Nicole McWilliams

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EXPLORING PSYCHO-EMOTIONAL RESPONSE TO ATHLETIC INJURY, REHABILITATION, AND READINESS TO RETURN IN NCAA DIVISION II COLLEGIATE ATHLETES

A thesis prepared by Miranda Nicole McWilliams

In partial fulfillment of the requirements for the degree,
Master of Science in Human Performance and Physical Education,
has been approved and accepted by the following:

Dr. Penny Sanders
Director of the Graduate School

6·27·17
Date

Tracy L Robinson

Dr. Tracey Robinson
Chairperson of Thesis Committee

6-20-2017
Date

Thesis Committee Members:

Tracy L Robinson
Dr. Tracey Robinson

Dr. Brian Zuleger

Joshua M. Dreher
Josh Dreher

Abstract

Athletic injuries can be devastating occurrences in an athlete's career. The reactions and responses that occur due to the injury can impact the athlete in his/her recovery and return to sport. Therefore, the purpose of the study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness to return in NCAA Division II collegiate athletes by exploring their experiences in real time: at the time of injury through rehabilitation and return to sport. This study used qualitative methods to uncover psycho-emotional responses to athletic injury, rehabilitation, and readiness to return. This study utilized interviews and daily journals over eight weeks. Twelve (5 females, 7 males) NCAA Division II athletes from eight sports (women's basketball, men's lacrosse, softball, women's soccer, track & field, football, baseball, and wrestling) participated in the study. Through the interviews and daily journal entries obtained post injury, during rehabilitation, and upon return to sport, four emergent themes were uncovered: emotional reaction to injury, injury produces social implications, motivation as a driving factor for recovery, and rehabilitation experience impacts view of injury and return. Emotional reaction to injury includes negative and positive emotions at initial injury, followed by a mood change through the process of recovery. The social implications that accompany athletic injury include positive and negative support from the social support system the athletes' interact with daily. The motivation factor as a driving component is a result of these athletes internal drive to return to sport and play. All of these emergent themes can impact the rehabilitation experience and ultimately the view of the injury and the return. If the rehabilitation experience is negative the views of the injury and the return will be negative until the situation can be guided in a positive way. These results illustrate the repercussions after sustaining an athletic injury that results in the athlete being removed from regular sport

participation for at least three days. The results show the complexity of the psycho-emotional reaction of an athlete at the time of injury, during rehabilitation, and their return to sport which can impact the educational foundation for healthcare providers who specialized in rehabilitative services among athletes.

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Chapter 1: Introduction

Athletic performance is dependent on an athlete's ability to use their mind and body to train and compete. A disruption in the balance of mind and body can cause an athlete to perform poorly or even become injured (Heil, 1993). Injuries can be small incidents or they can be life-altering events. How an athlete deals with injury, both physically and mentally can determine how they perform after they return to their sport (Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998). Athletic training allows individuals to observe this balance of mind and body being constantly tested. Athletes are dependent on their bodies to perform as well as their minds to get them there. When a disruption of what some would describe as a state of well-being or harmony between the two factors is disrupted, many reactions can occur. Injured athletes seem to go through a grieving process (Quinn & Fallon, 1999). They experience anger, bargaining, depression, avoidance, denial, and eventually accept the fact of injury and begin to heal (Quinn & Fallon, 1999).

Athletes are different in how they express these emotions and what they do to overcome them. Athletic trainers heal athletes when they are at their lowest point and build them back to the high status of which they hold themselves (Madrigal & Gill, 2014). However, a majority of the encounters are focused on a physical return and the mental aspect is generally ignored. When an athlete returns to their sport physically ready, there may still be underlying emotions like anxiety or fear of re-injury, which make them susceptible to injury (Quinn & Fallon, 1999). If their rehabilitation includes a physical and mental component, they are more likely to return to sport more confident and decrease their chance of re-injury (Quinn & Fallon, 1999).

Motivation may be the key to a successful rehabilitation protocol. Determining what motivates an athlete to train and compete may help drive the injured athlete in returning to sport.

Self-determination theory has three key components (autonomy, competence, and relatedness) that may allow for a successful recovery and could be implemented into the rehabilitation program (Ryan & Deci, 2000). These three components allow the athlete to feel a sense of independence, feel they are competent in what they are doing, and relate to others in the same situation or in their support system (Ryan & Deci, 2000). The support system may include the athlete trainer, family, teammates, or even coaches (Hamson-Utley, Martin, & Walters, 2008). All of these components should be included in the athlete's rehabilitation so they can maintain a sense of self-worth (Madrigal & Gill, 2014).

Discovering what motivates an individual athlete may be beneficial for their return to sport. The rehabilitation can be conducted with small goals in mind, such as alleviating pain, regaining range of motion, and decreasing swelling, allowing for all three components to be addressed (Ryan & Deci, 2000). The athletic trainer should provide the athlete with support both physically and psychologically but also drive them toward their accomplishments within their sport (Hamson-Utley et al., 2008). Achieving one of the three components will aid the athlete and increase their well-being, and impact adherence to create a more positive environment (Hamson-Utley et al., 2008; Madrigal & Gill, 2004).

Statement of the problem

Athletes are dependent on their body in performance (Heil, 1993). When their body is damaged and cannot function they are susceptible to a negative emotional state of being (Heil, 1993). The experience of negative emotions impacts their self-identity and their relationships with coaches and teammates (Almeida, Olmedilla, Rubio, & Palou, 2014; Madrigal & Gill, 2014). These negative impacts result in negative experiences in rehabilitation for their injury, and could negatively impact their return to sport (Almeida et al., 2014; Madrigal & Gill, 2014).

Most commonly, athletes are driven by intrinsic and extrinsic factors such as enjoyment, ego, and external rewards, respectively (Ryan & Deci, 2000). Utilizing their motivation in a positive way can result in a positive experience, especially when goals are set during rehabilitation (Clement, Arvinen-Barrow, & Fetty, 2015; Madrigal & Gill, 2014).

Purpose of the study

The emotions experienced by athletes during injury and rehabilitation are vast and vary in many ways (Quinn & Fallon, 1999). Understanding what is experienced during the injury, rehabilitation, and return to sport can be explained through an athlete's drive or motivation (Heil, 1993; Ryan & Deci, 2000). Therefore, the purpose of the study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness to return in NCAA Division II collegiate athletes by exploring their experiences in real time: at time of injury through rehabilitation and return to sport.

Research questions

1. What are the common responses and reactions to athletic injury sustained by collegiate athletes?
2. What are the experiences of collegiate athletes in response to sustaining an athletic injury?
3. What are the common responses and reactions to rehabilitation of athletic injuries by collegiate athletes?
4. What are the psychological factors that affect the readiness of collegiate athletes on their return to sport?

5. Are there differences in demographics related to athletic injury, rehabilitation, and readiness?

Delimitations

This study was delimited as follows:

1. The participants were from one NCAA Division II University.
2. This study included a limited number of athletes who became injured during their season (2016-2017).
3. Injuries for this study were only those sustained from or during their recognized sport.
4. The number of participants was limited to the number of injuries during a 10-week time frame.
5. The participants were only from a select number of sports.

Limitations

This study had the following limitations:

1. The participants were responsible for the effort they put forth during rehabilitation. This impacted adherence and effort as well as the number of possible dropouts from the study.
2. Discussion among athletes could not be monitored outside of the research setting resulting in possible exchanges of thoughts and emotions among participants.
3. The study was impacted by a number of factors such as types of injury, the individuals who are injured, sports, and the number of injuries.

4. This study was dependent on individuals being injured and how it impacted their playing abilities.

5. This study was dependent on the supervising certified athletic trainers (ATC) and their abilities for injury care. Lack of ability or effort on the supervising ATCs part may have inhibited reported experiences of the participants.

Assumptions

It was assumed that:

1. Athletes would answer any and all questions asked of them truthfully and honestly and to the best of their ability.

2. Athletes would have an understanding of their own emotions and would possess the ability to articulate these emotions and answer the questions appropriately.

3. The supervising ATC would refer the appropriate injured athletes.

4. Each athlete would comply and adhere with the rehabilitation protocol set forth by the supervising ATC.

5. Athletes would comply and adhere to the journaling activity and would be diligent in their participation.

Definition of terms

Athletic injury: bodily damage caused from sport participation, accompanied by pain, disability, dysfunction, and need of medical attention that results in a changed participation status (Almeida et al., 2014).

Collegiate athlete: non-professional athlete competing at the collegiate level at a university or educational institute (NCAA, 2016).

Functional journaling: a data collection technique allowing the participant to narrate in first person about their experiences relating to their injury, rehabilitation protocol, and returning to their sport (Marshall & Rossman, 2011).

Injury diagnosis: identification of a problem through examination of the signs and symptoms (Venes, 2013).

Motivation: the expression of one's effort or intensity toward something based on intrinsic or extrinsic factors (Weinberg & Gould, 2014).

NCAA Division II: Division of the National Collegiate Athletic Association for athletes to compete at a high level of competition (NCAA, 2016).

Psycho-emotional: emotional cognitive disturbance from sustaining an injury with positive and negative affect alterations on individual, i.e., anger, depression, relief (Madrigal & Gill, 2014).

Readiness (to return): the state of being prepared for return after injury with implications for return including level of post-injury performance, competitive anxiety, and re-injury occurrence (Heil, 1993; Podlog, Banham, Wadey, & Hannon, 2015).

Rehabilitation: process of treatment and education in which the injury sustained is corrected to full function and the participation level has returned to pre-injury status with no limitations (Venes, 2013).

Severity of injury: the level of impact an injury has on the psychological and physical well-being of an individual (Covassin, McAllister-Deitrick, Bleecker, Heiden, & Yang, 2015).

Supervising ATC: the certified athletic trainer (ATC) assigned to an institutional sponsored sport who is in charge of the injured athlete.

Chapter 2: Review of Literature

Introduction

Injury from sport occurs in approximately 40% to 50% of college athletes (Yang et al., 2014). This is categorized by at least one injury, which requires medical attention (Yang et al., 2014). Injuries are disabling to the athlete in two ways, cognitively and physically (Yang et al., 2014). How an athlete deals with injury can range from a positive to a negative response (Madrigal & Gill, 2014). This can also have an effect on the recovery process for return to sport (Madrigal & Gill, 2014). An athlete will generally partake in a rehabilitation protocol for the injury sustained. However, their perception of the injury can result in a negative or positive rehabilitation experience (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). How the athlete returns from rehabilitation and injury will determine their ability to play, both cognitively and physically. Ideally, pre-injury status is the ultimate goal with rehabilitation. The research on psycho-emotional response to injury and rehabilitation behaviors is somewhat vague (Quinn & Fallon, 1999). The factors that drive an athlete to recover are also lacking (Quinn & Fallon, 1999). The characteristics that accompany an athletic injury differ from the characteristics experienced by populations with significant illnesses (Quinn & Fallon, 1999). Thus, there is a need for empirical evidence related to the psycho-emotional response to athletic injury, as well as the key factors driving an athlete to continue after a devastating event (Quinn & Fallon, 1999; Podlog & Eklund, 2005). The following review will look at self-determination theory, psychology of injury and rehabilitation, emotional response to injury, and gender differences in response to injury. The purpose of this study was to explore the psycho-emotional response to injury and rehabilitation, while also exploring the drive to return to sport.

Motivation

Motivation is a key factor for all aspects of life. Ryan and Deci (2000) established the organismic integration theory (OIT) which claims there are varying degrees of self-determination that are categorized by the level of which the motivation stems from the self; this is depicted in Figure 1.

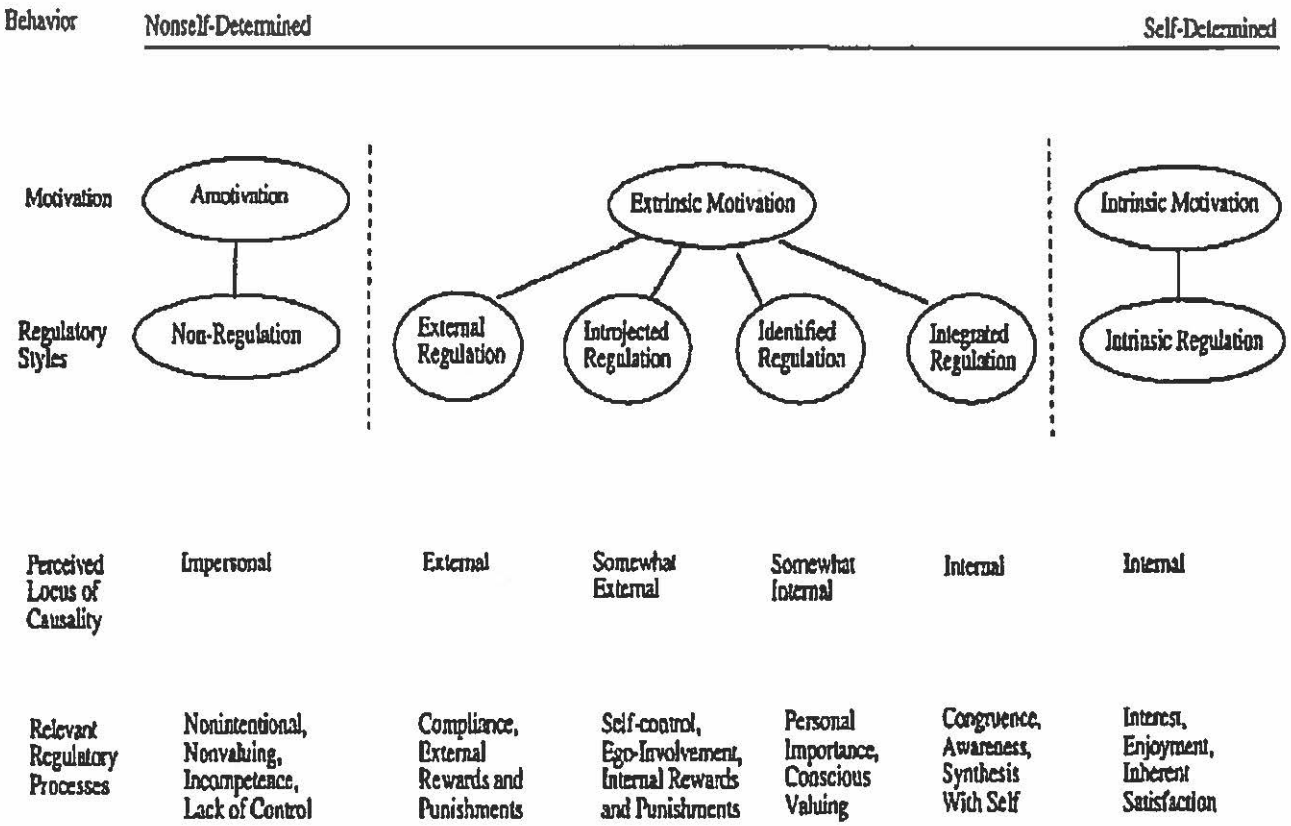

Figure 1. Organismic Integration Theory, sub-theory of Self-Determination Theory (Ryan & Deci, 2000).

The three levels of motivation (amotivation, extrinsic, and intrinsic) are characterized further with regulatory styles (Ryan & Deci, 2000). Amotivation is described as participating

without intent or desire of outcome (Ryan & Deci, 2000). Amotivated athletes partake in an activity with decreased competence in their self and "go through the motions" without valuing the activity (Ryan & Deci, 2000). Amotivation is on the lower spectrum of the OIT, which is a sub-theory of the self-determination theory (SDT) (Ryan & Deci, 2000). Amotivation is categorized as non-self-determined, making it at the lowest end of the spectrum (Ryan & Deci, 2000). On the higher end of the spectrum is intrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation displays characteristics of high autonomy and is typically seen as the ideal example of self-determination (Ryan & Deci, 2000). This is important for an injured athlete who is experiencing a wide range of emotions. An injured athlete with greater levels of intrinsic motivation will be more likely to adhere to their rehabilitation protocol (Podlog & Eklund, 2005).

Between amotivation and intrinsic motivation in the OIT model is extrinsic motivation (Ryan & Deci, 2000). According to OIT, behaviors will be encouraged or obstructed by contextual factors and linked to the different forms of extrinsic motivation (Ryan & Deci, 2000). Extrinsic motivation has four different levels which differ in their relationship to autonomy directing them to the amotivated spectrum or the intrinsically motivated spectrum (Ryan & Deci, 2000). The lower end of extrinsic motivation is externally regulated and is seen as the least autonomous of the four (Ryan & Deci, 2000). The corresponding behaviors are done with only external reward or demand as the result; examples include trophies and awards (Ryan & Deci, 2000). Introjected regulation is the next level of extrinsic motivation (Ryan & Deci, 2000). The amount of autonomy related to this level is higher than externally regulated but is still on the lower end of the spectrum (Ryan & Deci, 2000). This level of extrinsic motivation is not typically associated with accepting the action as one's own, but is related to avoiding feelings of guilt or anxiety from

others, or to boost ego (Ryan & Deci, 2000). This level of extrinsic motivation drives participation to be generated by feelings associated with an ego boost or avoiding feelings of guilt or anxiety, which allows others to witness the competence in the activity (Ryan & Deci, 2000). This study addressed the levels of motivation an individual experiences while injured through reports of personal experience with injury, rehabilitation, and readiness to return.

Toward the higher end of extrinsic motivation is identified regulation (Ryan & Deci, 2000). Identified regulation has a direct effect on personal importance compared to previous levels of extrinsic motivation, as well as being more autonomous (Ryan & Deci, 2000). An example would be participating for personal value and outcomes, i.e. participating in physical activity is good for you (Ryan & Deci, 2000). The last level of extrinsic motivation, integrated regulation, is highly autonomous and mimics intrinsic motivation the best (Ryan & Deci, 2000). Integrated regulation is still driven by extrinsic factors to attain external outcomes instead of primarily done for enjoyment, i.e. participating because it defines one's sense of self (Ryan & Deci, 2000). Ryan and Deci (2000) identified an autonomous motivation composite relationship between three levels of motivation, intrinsic motivation, identified regulation, and integrated regulation, due to the high levels of autonomy within each level.

The primary energy driving our lives is intrinsic motivation (Ryan & Deci, 2000). An example of intrinsic motivation is participating for enjoyment and interest (Ryan & Deci, 2000). Intrinsic motivation is seen early in childhood development and evolves as we mature (Ryan & Deci, 2000). External factors can affect an athlete's intrinsic motivation (Ryan & Deci, 2000). The external factors that can drive an athlete's intrinsic motivation can be traced back to the pressure experienced from participation in sports and involvement from coach and surroundings

(Ryan & Deci, 2000). These external factors may include, but are not limited to external rewards, punishment, internal rewards, and incompetence (Ryan & Deci, 2000).

Intrinsic motivation is described in the SDT (Ryan & Deci, 2000). There are three basic psychological needs: autonomy, competence, and relatedness, which will help individuals flourish in social environments if achieved, and allow them to reach a state of well-being (Ryan & Deci, 2000). Internal characteristics and these basic psychological needs are key components for intrinsic motivation development (Ryan & Deci, 2000).

The first of the three basic psychological needs is autonomy (Ryan & Deci, 2000; Ryan & Deci, 2008). Autonomy is the feeling of independence of one's actions or choices and is the driving factor for intrinsic motivation (Ryan & Deci, 2000; Ryan & Deci, 2008). Competence is the second of the basic psychological needs, and is the feeling of success and efficiency (Ryan & Deci, 2000; Ryan & Deci, 2008). The third basic psychological need is relatedness (Ryan & Deci, 2000; Ryan & Deci, 2008). Relatedness is the social connection we feel and need as humans (Ryan & Deci, 2000; Ryan & Deci, 2008). Competence and relatedness vary with each level of motivation including amotivation, extrinsic, and intrinsic motivation within SDT (Ryan & Deci, 2000; Ryan & Deci, 2008). High levels of the three basic needs leads to feelings of enjoyment and interest in participation (Ryan & Deci, 2000).

Environments that do not promote these basic needs will lead to a negative impact on life (Ryan & Deci, 2000). The common negative aspects are alienation and inauthenticity (Ryan & Deci, 2000). Alienation leads to hostility and withdraw from social situations, while inauthenticity leads to untrustworthiness and unreliable or untrue self (Ryan & Deci, 2000). External factors directly affect self-determination by assimilating the extrinsic outcomes as one's own achievements (Ryan & Deci, 2000). An example of this would be a patient and a

practitioner disagreeing on the outcomes of a rehabilitation process. If a patient does not agree with the outcome goals of the rehabilitation process, they will be less likely to adhere to the process (Podlog, Lochbaum, & Stevens, 2010). Acknowledging autonomy, competence, and relatedness in the rehabilitation process may promote positive growth of intrinsic motivation (Ryan & Deci, 2000).

Autonomy, competence, and relatedness from SDT are key components in the role of intrinsic motivation (Ryan & Deci, 2000). Understanding the demand for these psychological needs in order for an individual to flourish can directly relate to athletic injury and the subsequent rehabilitation process (Ryan & Deci, 2000). Two hundred and four athletes (138 males, 66 females) participated in an investigation by completing a questionnaire relating to measures of well-being, self-esteem, and the athlete's perceived outcome of rehabilitation (Podlog et al., 2010). Podlog et al. (2010) used a questionnaire that included three measures of well-being, and was adapted from the *Need Satisfaction Scale* by Gagne, Ryan, and Bargmann (2003). The *Need Satisfaction Scale* was originally developed to relate specifically to gymnasts in order to review autonomy, relatedness, and competence during a practice session (by Gange, Ryan, & Bargmann, 2003). Podlog et al. (2010), adapted the *Need Satisfaction Scale* to focus on rehabilitation as opposed to a practice session. Two major adjustments were made to the original version by first replacing the word "Today…" with "During my rehabilitation I felt like…" as well as word substitutions made to correlate to the relevance of the intended purpose for the study (Podlog et al., 2010). Another adjustment made was to eliminate any reference to teammates and replace with coaches and/or physiotherapists (Podlog et al., 2010). The 12-item scale responses are from 1 (completely disagree) to 5 (strongly agree) on a Likert-type scale (Podlog et al., 2010).

Podlog et al. (2010) also utilized the *Positive and Negative Affect Scale* (Crawford and Henry, 2004). This scale was a total of 20 items: 10 referencing positive affect and 10 referencing negative affect (Crawford & Henry, 2004). The items began with the stem, "Overall during my injury recovery I felt…", and questions were answered from a response of 1 (strongly disagree) to 5 (strongly agree) on a Likert-type scale (Crawford & Henry, 2004). The *Self-Esteem Scale* by Rosenberg (1965) included 10 items that were averaged for an overall self-esteem score. Response stem was similar to the *Positive and Negative Affect Scale* and were answered from 1 (strongly disagree) to 5 (strongly agree) on a Likert-type scale (Rosenberg. 1965).

Another questionnaire used by Podlog et al. (2010) was the *Subjective Vitality Scale* (Ryan & Frederick, 1997), and was in reference to the athlete's feelings of vitality; these were averaged for an overall score (Podlog et al., 2010). The six-item scale used stems similar to the previously mentioned questionnaires and used a similar Likert-type scale to respond (Podlog et al., 2010). The final segment of the questionnaire was the *Return to Sport after Serious Injury Questionnaire* (Podlog et al., 2010). This was developed by Podlog and Eklund (2005) to assess the perceived outcome of rehabilitation (Podlog et al., 2010).

The inventory items were distributed by the first author to the participants of the study (Podlog et al., 2010). A correlation analysis, as well as a mediation analysis, was conducted for all scales (Podlog et al., 2010). Podlog et al. (2010) stated autonomy, competence, and relatedness as frequent issues for return to sport among athletes. Autonomy related to sport is defined as the initiator of an athlete's own skills (Podlog et al., 2010). Competence is the belief of these developed skills and their ability to use them (Podlog et al., 2010). Relatedness is the athlete's feeling of belongingness in a social aspect (Podlog et al., 2010). Any alteration of these

feelings may resulted in negative affect and decreased motivation, which results in compliance issues for rehabilitation (Podlog et al., 2010). The researchers concluded based on their results that increased well-being led to a decrease of negative perceived outcome and an assumption of a positive return to sport outcome (Podlog et al., 2010).

Researchers compared motivation levels for participation in physical activity between genders using the SDT (Lauderdale, Yli-Piipari, Irwin, & Layne, 2015). The purpose was to identify gender differences among college students on their motivation to participate related to their actual participation rate in physical activity weekly (Lauderdale et al., 2015). The participants included 96 college students (33 males, 63 females) from a small college (Lauderdale et al., 2015). The researchers used a questionnaire to monitor the motivational regulations of each participant in conjunction with self-reported physical activity (Lauderdale et al., 2015). Recruitment was done through email at the college notifying instructors of the study and requesting permission to administer the questionnaire to their students (Lauderdale et al., 2015). A meeting was set up to discuss the procedures with the instructors and to set up a time for the researcher to administer the questionnaire to the class (Lauderdale et al., 2015). Data was analyzed quantitatively through statistical analysis using statistical software and also included descriptive statistics (Lauderdale et al., 2015).

Lauderdale et al (2015) focused on the decrease of physical activity in college students with females having the lowest participation rates. The results showed that males displayed higher levels of intrinsic motivation over their female counterparts (Lauderdale et al., 2015). The results show self-determined motivation is a key in physical activity among this population (Lauderdale et al., 2015). This is discussed further with males participating for internal factors such as the benefits of exercise, enjoyment, and stimulation (Lauderdale et al., 2015). These

reasons allow the researchers to categorize the participants who self-reported as active and moderately active as having moderate to high levels of intrinsic motivation (Lauderdale et al., 2015). The results from this study are linked back to SDT and solidify the researchers' hypothesis that behavior is determined by an individual's motivations to participate (Lauderdale et al., 2015).

Increased well-being is accomplished through a positive environment that promotes autonomy, relatedness, and competence which are the three basic psychological needs in SDT (Ryan & Deci, 2000). Self-determined athletes are motivated to participate in their desired activities through different intrinsic and extrinsic factors (Ryan & Deci, 2000). This will play a role in their self-determination to recovery from an athletic injury. The self-determination theory will serve as a foundation in exploring athlete's response to athletic injury and rehabilitation at the NCAA Division II collegiate level.

Psychology of injury

Sports injuries are a devastating occurrence among the athletic population (Heil, 1993). Heil (1993) states there are around 17 million injuries in one year related to sports. The increase of enrollment in athletics has been partly responsible for the significant increase in sport-related injury over the last 20 years (Almeida et al., 2014). Healthy and injury-free athletes are key components in the success to a longer career in competitive athletics (Heil, 1993).

Due to the increased popularity of competitive sports among American culture, the discipline of sports medicine has grown, specifically related to the topic of the cognitive approach to sport (Almeida et al., 2014). Typically, after an athletic injury is sustained, the primary entity cared for the most is the physical and physiological aspect (Almeida et al., 2014). This leads to the presumption of a relatively quick recovery, and the athlete being capable of

returning to their sport with no issues (Almeida et al., 2014). However, developing research suggests that the psychological aspect of injury is just as important as the physiological aspect upon return to sport, and has a longer recovery time compared to physiological return (Almeida et al., 2014; Heaney, 2006; Heaney, Walker, Green, & Rostron, 2015).

Severity of Injury

The severity of an injury can significantly impact the athlete's psyche (Covassin et al., 2015). Covassin et al. (2015) investigated time-loss and fear of re-injury in athletes. The researchers examined 525 injuries and 350 athletes (227 males, 123 females) ranging in ages from 18 to 26 years from two Big Ten NCAA Division I universities (Covassin et al., 2015). Two-thirds of the injuries reported occurred among males and half the injuries occurred in practice (Covassin et al., 2015). The athlete's injury had to meet two criteria: clinical signs of injury determined by the certified athletic trainer and their inability to return to participation on the same day (Covassin et al., 2015). Severity was based on time-loss and was categorized by minor (less than 1 week), moderate (1-3 weeks), and major (greater than 3 weeks) (Covassin et al., 2015). Fear of return and fear of re-injury were determined by two questions answered with a Likert-scale (Covassin et al., 2015).

A baseline survey including injury history and demographics was completed for all athletes during pre-season (Covassin et al., 2015). A weekly report was given to the researchers by the athletic trainers on who was cleared from their injury and included information such as type of injury, day of injury, and day of clearance (Covassin et al., 2015). The researchers would contact the athletes within one week of their return and the athletes would complete the return-to-play survey (Covassin et al., 2015). The sample consisted of 285 lower extremity injuries, 97 upper extremity injuries, and 88 head, face, and neck injuries (Covassin et al., 2015).

Results showed that athletes with major injuries or more severe injuries reported a greater fear of returning to their sport compared to moderate and minor injuries (Covassin et al., 2015). Athletes who experienced major or moderate injuries showed significant results on fear of re-injury compared to minor injuries (Covassin et al., 2015). These results indicate a significant disruption of their psycho-emotional response to injury when the injury is severe in terms of time-loss (Covassin et al., 2015). Athletes may experience other emotions such as anxiety with return to sport, frustration with recovery, and resentment of teammates (Covassin et al., 2015).

Podlog and Eklund (2005) investigated return to sport after serious injury. The study included 180 athletes (117 males, 63 females) at different competitive levels of participation, ranging in ages from 18 to 44 years (Podlog & Eklund, 2005). The participants were recruited on average two years and nine months after their return from serious injury (Podlog & Eklund, 2005). The time-loss criteria was two months minimum (Podlog & Eklund, 2005). Two surveys were used, one of which measured motivation of sport participation and the other measured the perceived psychological outcomes of returning to sport (Podlog & Eklund, 2005). These surveys were administered by hand and email by the researchers, coaches, and/or the athletes to their teammates (Podlog & Eklund, 2005). Assessing the psycho-emotional response to injury retroactively is common, but not necessarily the most accurate way to research response to sport injury. The current study looked at real-time psycho-emotional response to sport injury to better analyze the experience of an injured athlete at time of injury, during rehabilitation, and when returning to sport.

The analysis was completed in three stages (Podlog and Eklund, 2005). The first of the stages was to reduce psychological factors relating to return to sport to determine significant psychological factors (Podlog & Eklund, 2005). In stage two, the previous steps were taken for

the motivation scale and the significant factors from each survey were compared in stage three (Podlog & Eklund, 2005). Results indicated a correlation between intrinsic motivations for return and a new perspective on participation (Podlog & Eklund, 2005). Extrinsic factors were related to worry and concern for returning (Podlog & Eklund, 2005). These results led to the conclusion that motivation is an important underlying factor to return to sport making it applicable to the current study.

Education on the Psychology of Injury

Sport psychology made its appearance in the late 1960s and is considered a specific type of psychology, encompassing psychological and physiological aspects of sport science (Heil, 1993). The three focuses of sport psychology are: (1) performance enhancement, (2) social issues, and (3) health and well-being (Heil, 1993). Athletes utilize the primary focus of performance enhancement within sport psychology (Heil, 1993). When performance is hindered by injury, the focus transitions to the health and well-being of the athlete (Almeida et al., 2014; Heil, 1993). The mental well-being of the athlete has since become a larger emphasis in sport psychology (Heaney, 2006; Heil, 1993).

Application of sport psychology to the athletic rehabilitation process has become a primary focus for researchers, as well as integrating the discipline into sports medicine professionals' education curriculum (Hamson-Utley et al., 2008; Heaney, 2006; Heaney et al., 2015). Evidence supporting the positive outcomes of integrating sport psychology into the rehabilitation process is widely supported (Heaney, 2006). However, the application of sport psychology is sparse among sports medicine professionals (Hamson-Utley et al., 2008; Heaney, 2006). Researchers suggest that reasons for the lack of sport psychology interventions is due to lack of education, perceived stigma, and lack of access to sport psychology professionals

(Heaney, 2006). Heaney (2006) developed a model for the integration of sport psychology into rehabilitation, which is depicted in Figure 2.

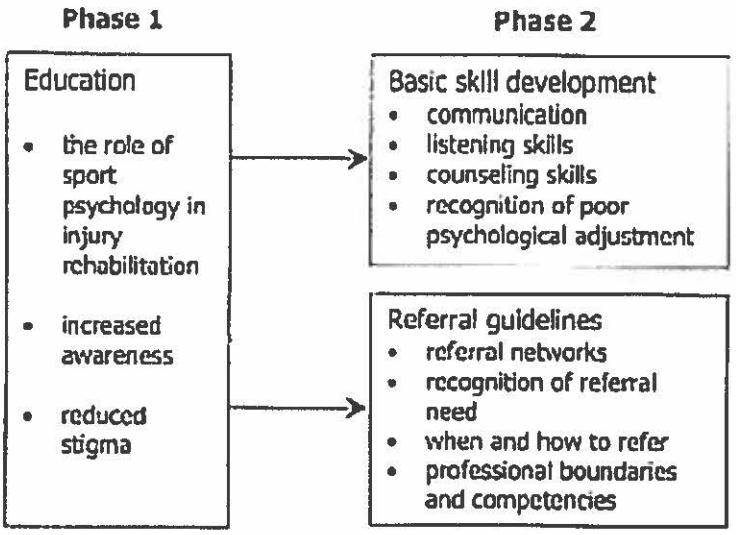

Figure 2. Integrated model for sport psychology into the rehabilitation process (Heaney, 2006)

Developing a curriculum for athletic training students that incorporates sport psychology will address phase 1 of the integrated model (Heaney, 2006). Athletic trainers are the foremost sports medicine practitioner and play an important role in the rehabilitation process (Heaney, 2006). If accredited programs for athletic trainers can develop an educational curriculum that incorporates sport psychology into the rehabilitation process, students would come out of college with the basic skills needed to address the issues athletes develop while injured (Heaney, 2006). Basic skills would include counseling skills, referral guidelines, listening skills, and communication skills (Heaney, 2006).

When researchers look at the use of psychological skills in the effectiveness on the rehabilitation process by athletic trainers, as well as physical therapists, they found that athletic

trainers had a more positive and confident outlook compared to physical therapists (Hamson-Utley et al., 2008). The research conducted looked at the participant's perception of the practitioner's skills and the effectiveness these skills have with their clients (Hamson-Utley et al., 2008). The researchers investigated the curriculum of both professions and found that only athletic trainers had formal training in the discipline of sport psychology (Hamson-Utley et al., 2008). Based on previous recommendations by Heaney (2006), education is the first step in developing the sports medicine practitioner's confidence and abilities to integrate sport psychology into the rehabilitation process.

Though athletic trainers receive the education in a formal setting, the basic skills are not necessarily incorporated into the practical portion of the education, which can hinder the effectiveness of the integrated model (Hamson-Utley et al., 2008). If athletic trainers possess the skills for referral but access to these professionals is limited, the effectiveness of the model may decrease (Hamson-Utley et al., 2008). Hamson-Utley et al. (2008) suggest that using psychological techniques for injury rehabilitation has a positive outcome; however, if the practitioners are not educated to support the athlete, the rehabilitation process will be impeded.

Education should encompass a magnitude of topics related to sport psychology (Heaney et al., 2015). Most importantly, it should focus on developing the skills for interpersonal communication, as well as positive self-talk, imagery, goal setting, and relaxation (Heaney et al., 2015). The most effective mode for education delivery is an applied and practical approach, in an undergraduate and/or postgraduate program for these professionals (Hamson-Utley et al., 2008). The topics are also supported by professional bodies by developing competencies for sport psychology (Hamson-Utley et al., 2008). The National Athletic Trainers' Association has three areas for psychology competencies: (1) theoretical background, (2) psychosocial strategies,

and (3) mental health and referral (Hamson-Utley et al., 2008). Figure 3 shows a comprehensive visual of the suggested areas of sport psychology, which should be covered by education programs.

Figure 3. Suggested areas of sport psychology for education programs (Hamson-Utley et al., 2008).

Utilizing this model for future educational programs will be beneficial for the practitioner as well as the future of athletic rehabilitation development. Coordinating between the two

disciplines, athletic training and physical therapy, will be beneficial for the sport medicine field as a whole.

Emotional Response to Athletic Injury

There are many levels of emotion experienced by athletes when they are injured. These can vary from the five stages of grief, specific emotions commonly experienced during injury, and measuring a response to injury. This section reviews these three areas of emotional response.

Five stages of grief

Research, for many years, has supported the use of the Kubler-Ross stage model of grief (Quinn & Fallon, 1999). This model includes denial, anger, bargaining, depression, and acceptance (Quinn & Fallon, 1999). Denial includes feelings of fear, shock, and avoidance, all in association with the problem or in relation to this study an injury (Kubler-Ross, 1965). Anger includes frustration, anxiety, and irritation in association with a problem or injury (Kubler-Ross, 1965). Depression includes feelings of being overwhelmed and helpless, whereas bargaining includes struggling to find a meaning and reaching out to others (Kubler-Ross, 1965). Finally, acceptance includes moving on and exploring new options and plans (Kubler-Ross, 1965).

The model is widely recognized and can be used in several scenarios of loss; it is not limited to terminally ill situations as it was originally developed (Quinn & Fallon, 1999). The stages listed are not typically experienced in the linear fashion; they are proposed and can be experienced in a different order based on each individual (Quinn & Fallon, 1999). This model can be used in relation to an athlete grieving over an athletic injury which can be debilitating to their performance (Quinn & Fallon, 1999). Understanding what emotions are experienced and

when. will be beneficial to this study as well as practitioners who work with an athletic population.

Athlete's response to athletic injury

Quinn and Fallon (1999) investigated the emotional response to injury from onset of injury through return to play. The researchers found an athlete will experience a wide range of emotions throughout the rehabilitation process including but not limited to: tension, depression, anger, fatigue, confusion, and vigor (Quinn & Fallon, 1999). The study was conducted on 136 elite athletes (118 males and 18 females) from 25 different non-contact and contact sports, with 73.5 percent being team sports (Quinn & Fallon, 1999). The mean age was 24.6 years, with the ages ranging from 18 to 44 years old (Quinn & Fallon, 1999). The researchers found the experience of a grieving athlete and a terminally ill patient were not similar (Quinn & Fallon, 1999). Athletes exhibited signs of emotional recovery from injury once the rehabilitation process progressed to the later stages, whereas the recovery for terminally ill patients remained negative (Quinn & Fallon, 1999). This information led to these researchers adapting a cognitive appraisal model to analyze the emotional response experienced by athletes when they were injured (Quinn & Fallon, 1999).

During their investigation, Quinn and Fallon (1999) looked at the different stages of the recovery process and assessed the primary emotions associated with each phase. The themes discovered during the investigation were medical appraisal, mood states, self-efficacy, rehabilitation motivation, coping skills, and confidence (Quinn & Fallon, 1999). From each of these themes, some of the emotions and responses that were discovered were in line with the researcher's hypothesis but others were proven incorrect (Quinn & Fallon, 1999).

During the medical appraisal phase, it was stated that for return to the activity, the athlete should be at full capacity functionally speaking (Quinn & Fallon, 1999). This includes full recovery of strength, range of motion, and athletic function by the end of the recovery process, which should improve as the recovery time progresses (Quinn & Fallon, 1999). This study included four rehabilitation phases starting with Phase 1 where the initial evaluation was conducted and an estimated time of recovery was determined. Once the estimated time of recovery was figured, this allowed for Phase 2 (one-third of recovery time), Phase 3 (two-thirds of recovery time), and Phase 4 (full recovery) to be determined.

Mood state was one hypothesized theme that showed results were similar to the ones proposed (Quinn & Fallon, 1999). As suggested previously, the Kubler-Ross model is predicted to be the ideal model for recovery, however for this study that was not the case (Quinn & Fallon, 1999). During Phase 1 of the rehabilitation, negative mood states were highest and decreased over phases 2-4 (Quinn & Fallon, 1999). The positive mood states, specifically the positive emotion vigor, was lowest after initial injury and significantly increased over the recovery process (Quinn & Fallon, 1999). This was consistent with the researcher's predictions and led to suggestions for practitioner's knowledge for developing rehabilitation protocols for future patients (Quinn & Fallon, 1999).

Self-efficacy was dependent upon the initial prognosis of the doctor and the actual time spent away from activity due to injury (Quinn & Fallon, 1999). The mean predicted recovery time or prognosis for the participants' injuries was 13.5 weeks, and the actual time for recovery was 19.2 weeks (Quinn & Fallon, 1999). If the mean predicted recovery time progressed passed the original time frame, a decrease in confidence was experienced by the athlete (Quinn & Fallon, 1999). Though confidence was negatively impacted by an increase in time spent away

from activity, motivation and adherence were positively impacted (Quinn & Fallon, 1999). The athlete's motivation during rehabilitation and adherence to rehabilitation increased over time, which was consistent throughout the subjects (Quinn & Fallon, 1999). The researchers found that confidence decreased over time, but the athletes still attended and participated in rehabilitation (Quinn & Fallon, 1999). The athletes may not have been confident in their injury and their return but they trusted the process to return from the injury (Quinn & Fallon, 1999).

Coping skills were not uni-dimensional, and active coping techniques varied between athletes (Quinn & Fallon, 1999). Quinn and Fallon (1999) recognized the difference of coping style among elite athletes and the traditional population of terminally ill patients. An elite athlete's more active approach to coping included planning, initiating direct action, and increasing effort, while common responses from terminally ill patients included denial, disengagement, and venting of emotions (Quinn & Fallon, 1999).

Finally, the last theme, confidence was measured and showed significant changes (Quinn & Fallon, 1999). Confidence was high after injury and decreased into Phase 2 of rehabilitation and increased from Phase 2 to 4 (Quinn & Fallon, 1999). The increase of confidence was not a predicted response of the researchers (Quinn & Fallon, 1999). However, the drop and progressive increase from Phase 2 to 4 were predicted; it was explained as the return of functional capacity increase during those phases and the athlete performance improved (Quinn & Fallon, 1999). This research will help with the knowledge of the different emotions experienced by athletes and will be given a better understanding for when to measure these emotions experienced.

Measuring Response to Injury

Madrigal and Gill (2014) conducted case study research on four female Division I athletes whose ages ranged from 20-21 years, were in their sophomore or junior year, and who participated in either soccer or softball. Each athlete had a significant injury that prevented them from participating in their sport from two weeks to eight months, and each injury required rehabilitation to recover (Madrigal & Gill, 2014). During the injury process, the athletes would complete questionnaires at three points during the process: immediately post-injury, midway through rehabilitation, and once they were cleared to play (Madrigal & Gill, 2014). Each questionnaire measured mental toughness, hardiness, optimism, athletic identity, coping, adherence, and psychological responses to injury (Madrigal & Gill, 2014). Injury to an athlete is a devastating event. Injury can trigger self-esteem issues, decreased confidence, and cause psychosocial emotions to develop (Madrigal & Gill, 2014). All of these can lead to the athlete having an identity crisis (Madrigal & Gill, 2014). Injury causes disturbances in physical, emotional, and behavioral responses for athletes (Madrigal & Gill, 2014).

The response to injury is determined by many factors including, but not limited to, the individual's personality and the rehabilitation process (Madrigal & Gill, 2014). How an athlete responds to an injury based on personality is comprised of their mental toughness, hardiness, and self-determination (Madrigal & Gill, 2014). An athlete with a positive outlook on the injury increases their ability to accept the injury resulting in more positive and better rehabilitation outcomes (Madrigal & Gill, 2014). The athlete will also have a more positive outlook when the rehabilitation process is a positive experience with minimal complications (Madrigal & Gill, 2014). However, if the athlete's response is negative, an increase of emotions such as anger,

depression, fear, and anxiety will result in negative outcomes for the athlete's injury and rehabilitation (Madrigal & Gill, 2014).

Athletes who experience frustration and tension towards the rehabilitation process will alter the injury recovery in a negative fashion (Madrigal & Gill, 2014). The athlete's psychological characteristics may be altered if a negative attitude toward the injury occurs; this includes self-esteem, self-identity, and confidence (Madrigal & Gill, 2014). When the psychological factors associated with the athlete are altered, compliance and behavioral problems toward the rehabilitation process will be affected (Madrigal & Gill, 2014).

There are many techniques used by researchers to measure the athlete's emotional and psychological response to injury. The Kubler-Ross stage model is widely recognized (Madrigal & Gill, 2014; Quinn & Fallon, 1999). However, this model is not conducive to the emotional reactions experienced by athletes in all circumstances (Quinn & Fallon, 1999). Another widely recognized instrument used is the Integrated Model of Response to Sports Injury (Wiese-Bjornstal et al., 1998) (Figure 4). Many variations of this integrated model have been used since then, but the model mentions mental toughness, hardiness, and athletic identity as factors related to response to injury (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). Mental toughness is defined as coping abilities, and hardiness is broken into components of commitment, control, and challenge (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998).

Overall, the model illustrates that personal, situational, emotional, and behavioral factors all influence an individual's response to athletic injury (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). The emotional response correlates with how an individual perceives their injury (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). Cognitive coping, goal adjustments, and self-perceptions are all examples of cognitive appraisal which is impacted by personal and

situational factors (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). Personal factors range from mood states to disordered eating to injury history, and many more significant factors (Wiese-Bjornstal et al., 1998). Situational factors include sport, teammate influences, and rehabilitation environment (Wiese-Bjornstal et al., 1998). Emotional factors influence behavior factors such as rehabilitation adherence (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). A stressor, such as injury, is impacted by personality, emotion, and social factors of the individual (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). An example of the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998) would be to compare two athletes with the same injury. Athlete 1 is mentally tough allowing them to easily cope with an injury, while athlete 2 is anxious and will exhibit signs of avoidance to the injury. This intricate model with many components (Figure 4) helps explain the complexity of the injury response. This can be a beneficial visual aid when developing rehabilitation protocols for the recovery of athletic injury both physically and psychologically.

There are many ways an individual will appraise a situation, and their appraisal will be influenced by personal and situational factors (Wiese-Bjornstal et al., 1998). Another component for appraisal is the emotional and behavioral response to the injury which stems from the personal and situational factors (Wiese-Bjornstal et al., 1998). Several components of the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998) were highlighted in the current study. Personal factors from the model were all included for a focus of study with the exception of the physical component. The personal factors may include, but are not limited to injury, psychological, and demographics categories (Wiese-Bjornstal et al., 1998). Situational factors include sport, social, and environmental categories (Wiese-Bjornstal et al., 1998). These

factors impact the behavioral and emotional response to injury, which were another component of the current study.

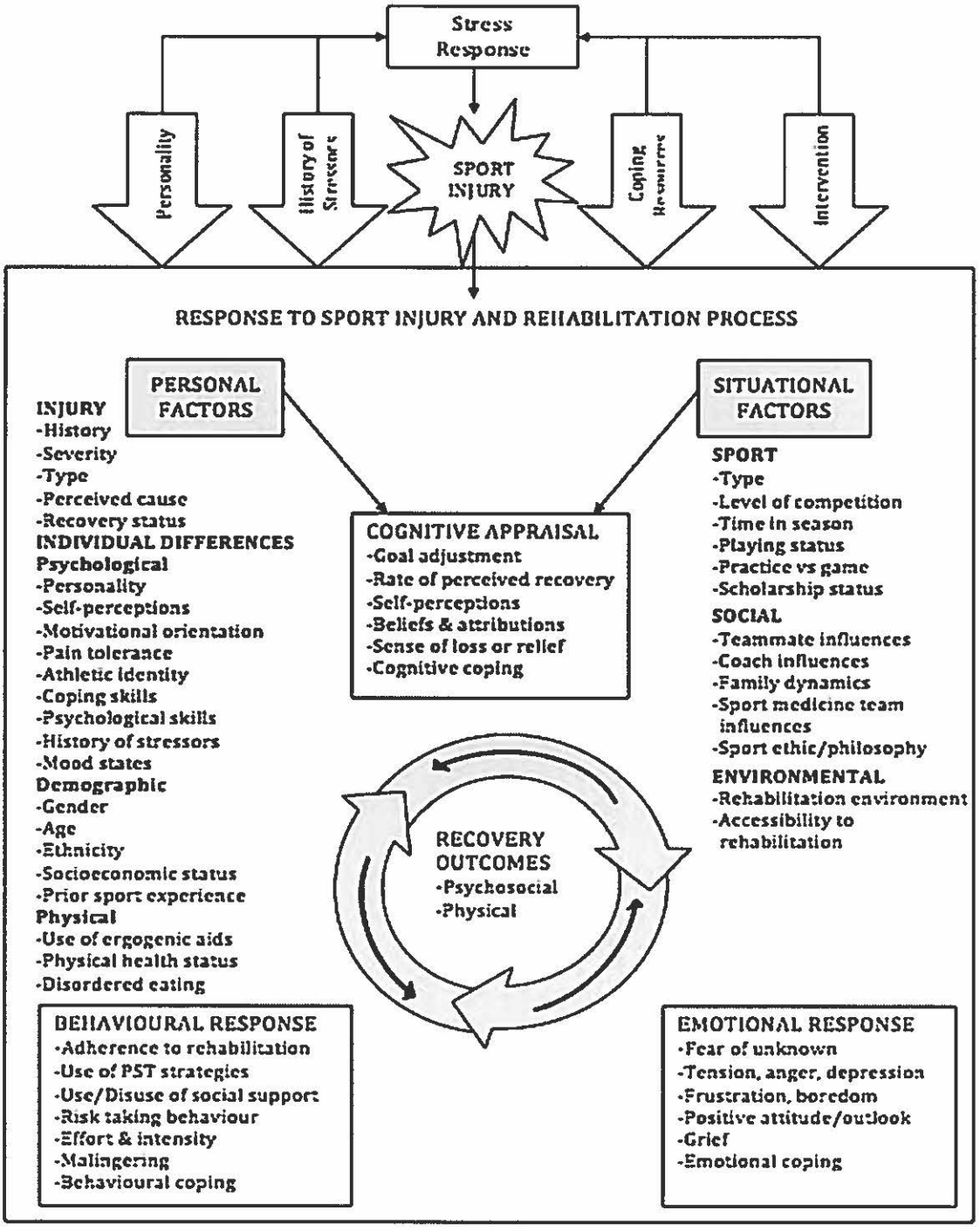

Figure 4. Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998).

Rehabilitation Process

The rehabilitation process is a key component for an athletic injury. The rehabilitation process is also widely interpreted. There are nine common goals, which should be reached for an athlete to recovery from an injury (Prentice, 2004). Individual athletic trainers may accomplish these goals in different ways but will ultimately achieve the same outcome (Prentice, 2004). Rehabilitation can be done through different mechanisms, including a variety of modalities, exercises, and manual therapy (Prentice, 2004). The nine goals for injury rehabilitation are: (1) decrease swelling, (2) reduce pain, (3) reestablish neuromuscular control, (4) restore full range of motion, (5) increase muscular strength, power, and endurance, (6) improve stability and balance, (7) maintain cardiorespiratory fitness, (8) use functional progressions, and (9) return to sport safely (Prentice, 2004). The criteria for standardizing rehabilitation protocols allows the supervising ATCs to develop rehabilitation protocols and maintain a standardized rehabilitation format with the above goals in mind for this study. If a participant did not adhere to their recommended rehabilitation protocol set in place by their supervising ATC, or the supervising ATC did not require rehabilitation and suggested rest for an injury, the participant was still eligible for the study. This is due to the implications it could have on their readiness to return, as well as any personal and/or situational factors and the behavioral and/or emotional responses, which follows. There are two components the current study focused on: (1) the rehabilitation process, including the athletic trainer's role with an athletic injury, and (2) the psychosocial response to injury. These two components impact the experience the athlete has associated with their injury (Clement, Granquist, & Arvinen-Barrow, 2013).

Athletic trainer's role with athletic injury

Athletic trainers play a vital role in the rehabilitation process (Clement et al., 2013; Hamson-Utley et al., 2008). Athletic trainers are the primary health care professionals for injured athletes and as a result, have the most interaction with the athlete during rehabilitation. The primary goal for rehabilitation of athletic injury is to return the athlete to their previous playing status prior to injury (Clement et al., 2013). Athletic trainers must possess confidence and the knowledge to return these athletes to this status (Clement et al., 2013). The education of the athlete in regards to their injury is the responsibility of the athletic trainer (Clement et al., 2013). Psychological skills that should be utilized in the recovery process are goal setting, imagery, positive self-talk, and relaxation, which would help address the negative responses that occur during rehabilitation (Clement et al., 2013).

In addition to the psychological skills provided by the athletic trainer for return to play, the athletic trainer will also provide social support for the athlete during the rehabilitation process (Yang et al., 2014). Depression and anxiety are common psycho-emotional symptoms experienced by injured athletes, and athletic trainers are the first responders and supporters for these athletes when injured (Yang et al., 2014). Having a support system during the recovery process benefits the athlete (Yang et al., 2014). Yang et al. (2014) specifically investigated the role of the athletic trainer as a social support for injured athletes. In a study involving two NCAA Division I Big 10 Conference universities, athletes were recruited who sustained at least one injury during the time period from 2007-2011 (Yang et al., 2014). The participating athletes were involved with 1 of 9 sports: men's baseball, men's basketball, men's football, men's wrestling, women's basketball, women's field hockey, women's soccer, women's softball, and women's volleyball (Yang et al., 2014). Of the 387 participants in the study, 594 injuries were

sustained and 80 percent of those athletes were satisfied with the support they received from the athletic trainer (Yang et al., 2014).

The study consisted of the primary researcher conducting baseline survey analysis to assess eligibility of the athletes from each school (Yang et al., 2014). Once the athlete was determined eligible, their process was monitored through an injury tracking software that was completed by the school's athletic trainer (Yang et al., 2014). The injured athlete had continuous follow-ups until they returned to play and had a final follow-up one week post return to play (Yang et al., 2014). One of the aspects examined was characteristics of injuries, which provides a breakdown of the injuries at different levels (Yang et al., 2014).

The results indicated twice as many injuries occurred among males, and football was the most frequent sport reported (Yang et al., 2014). Sprains were the most common injury reported, while the knee was the most reported joint injured, followed by head/neck, ankle and shoulder (Yang et al., 2014). Of the injuries reported, 40 percent lost a week or less of playing time, 30 percent lost a week to one month of playing time, and 30 percent lost more than one month of playing time (Yang et al., 2014). These results indicated specific populations, such as males and contact sports, displayed common frequencies of injury (Yang et al., 2014). The results also showed that social support during the rehabilitation of an injury is important and that 53.1% of the time athletes felt supported by their athletic trainer (Yang et al., 2014). Social support is an important aspect of psychosocial response (Yang et al., 2014). Due to the lack of research on the athletic trainer's role as social support, this role can be an assumed role for the profession of athletic training.

Psychosocial response to injury

Clement et al. (2015) investigated the psychosocial responses related to the different rehabilitation phases. The study investigated phases of physical rehabilitation and looked at the psychosocial responses to injury in order to develop similar phases for psychosocial phases of rehabilitation (Clement et al., 2015). Eight NCAA Division II injured athletes (4 males, 4 females) from acrobatics, football, and baseball teams, were interviewed (Clement et al., 2015). Eligible participants were screened prior to participation in the study, and previously injured athletes were not eligible participants (Clement et al., 2015). Once the participants were deemed eligible, they were given an overview of the study and were then brought into an interview averaging 55 minutes (Clement et al., 2015). Researchers found that athletes displayed different psychosocial responses to the injury at different times (Clement et al., 2015). The appraisal of the injury consisted of four phases: initial injury, diagnosis, rehabilitation, and return to play (Clement et al., 2015). Rehabilitation phases and psychological phases of rehabilitation displayed similar themes including behavior responses, emotional responses, and appraisal (Clement et al., 2015).

The first phase includes two components: (a) the initial response to injury, and (b) the response after diagnosis (Clement et al., 2015). The emotions related to initial injury are generally negative, but after diagnosis they seemed to change slightly in a positive way (Clement et al., 2015). The effect on the athlete was primarily dependent on the diagnosis and the emotions related to the outcome (Clement et al., 2015). Depending on the results of the diagnosis and prognosis, the athlete's mood would fluctuate either negatively or positively (Clement et al., 2015). For example, if the diagnosis and prognosis were appraised by the athlete in a positive sense, they would experience feelings of hope and trust for their injury and

rehabilitation (Clement et al., 2015). Conversely, a negative appraisal would generate negative emotions such as fear and anger (Clement et al., 2015). Phase two focused on the responses to rehabilitation and the initial responses were caution, frustration, and doubt (Clement et al., 2015). The social support of the athletic trainer was more apparent in this phase specifically toward the final stages (Clement et al., 2015). In the third and final phase, return to sport, athletes demonstrated signs of caution, anxiety, and excitement (Clement et al., 2015).

In addition to these phases of psychosocial response, the willingness to compete and the motivation needed to return to sport are key roles for recovery and adherence to rehabilitation (Clement et al., 2015). Recognizing the different psychosocial responses to injury during the stages of recovery will provide a positive return to sport.

Readiness to Return

Upon return to sport, athletes experience psycho-emotional and psychosocial concerns (Herring, Kibler, Putukian, Coppel, Cavanna, & Chang, 2017) Podlog, Dimmock, & Miller, 2011). When returning to participation, athletes experience a number of thoughts and emotions (Herring et al., 2017; Podlog et al., 2011). These thoughts and emotions may include feelings of anxiety with re-injury, feeling unable to reach performance goals, decreases in performance abilities and athletic identity, feelings of isolation, and inadequate social support (Herring et al., 2017; Podlog et al., 2011). These feelings, thoughts, and emotions have a direct impact on the basic psychological needs described within the SDT and are related to an athlete's self-worth and well-being (Podlog et al., 2011). Negative psychological factors increase risk of injury, re-injury, and recovery from injury (Bauman, 2005). The pressure to return also impacts an individual's thoughts and feelings, and is consistently seen among elite athletes (Bauman, 2005; Podlog et al., 2011). The pressure can lead to early return, resulting in negative thoughts and

emotions, and can lead to psychological issues and re-injury (Bauman, 2005; Podlog et al., 2011). These thoughts and emotions are common when readiness to return is perceived as a negative experience.

Tatsumi (2014) compared return to sport and the experience of rehabilitation among 113 athletes in a university setting. The criteria for participation included: (1) athletes with injuries who completed rehabilitation and were removed from competition for at least a week, (2) athletes with injuries who did not complete rehabilitation and were removed from sports for longer than a week, and (3) injured athletes who were perceived as having aspiring athletic careers ahead of them (Tatsumi, 2014). The participants were asked to complete questionnaires regarding adaptation to return, feelings experienced during their injury, acceptance of injury, and adherence to rehabilitation (Tatsumi, 2014). The results from this study indicated the experience an individual has during their rehabilitation, or their coping time allowed from rehabilitation will impact their sense of self, and ultimately their return (Tatsumi, 2014). When an individual accepted their injury and adhered to their rehabilitation, their return to sport was perceived positively (Tatsumi, 2014). Adaption to return was also impacted by the individual's ability to express their emotions (Tatsumi, 2014). Concentrating on past feelings and not having a sense of personal growth during the coping and rehabilitation process created a negative outlook of return (Tatsumi, 2014). Overall, it is important to recognize positive attributes early, maintain the positive attitude during rehabilitation, and allow the positive sense of self to create a welcoming return to sport (Tatsumi, 2014).

The psychological response to rehabilitation differs among individual athletes, however a positive environment during the rehabilitation process is conducive to success (Tatsumi & Takenouchi, 2014). The beginning stages of rehabilitation should start with acceptance of the

injury (Tatsumi & Takenouchi, 2014). Acceptance of the injury will result in positive rehabilitation behaviors, which will lead to a confident athlete at the return to sport phase (Tatsumi & Takenouchi, 2014). On the other hand, negative feelings toward the injury will result in negative rehabilitation behaviors and will have a negative impact on return to sport (Tatsumi & Takenouchi, 2014). Some negative reactions may include anger and remorse (Tatsumi & Takenouchi, 2014). To counteract these negative reactions during the rehabilitation phase, the athlete should receive support and understanding from their environment leading to improvements in attitude, emotional response, and coping behaviors (Tatsumi & Takenouchi, 2014). Once the injury is sustained, the athlete needs to maintain their self-motivation and their sense of self and maintain these feelings until return to sport is attained (Tatsumi & Takenouchi, 2014).

Podlog, Hannon, Banham, and Wadey (2015) investigated the psychological readiness on return to sport. Seven participants (3 females and 4 males) from two team sports and two individual sports, were given a survey relating to their injury (Podlog et al., 2015). The process included two stages: focus group and interviews (Podlog et al., 2015). The focus group was to provide an enthusiastic environment to promote in-depth stories for return to play (Podlog et al., 2015). Interviews were used to further explore the individual's stories more in-depth and provide more details of their own stories (Podlog et al., 2015). Three attributes arose from the findings: confidence in returning to sport, realistic expectations of one's sporting capabilities, and motivation to regain previous performance standards (Podlog et al., 2015). The key component for successful psychological readiness was confidence (Podlog et al., 2015). The athletes were confident with the rehabilitation process as a whole, making the psychological readiness positive, leading to self-confidence upon return to sport (Podlog et al., 2015).

Maintaining an individual's self-determined motivation is an important component for returning to sport and the feeling of readiness to return (Podlog & Eklund, 2005; Tatsumi & Takenouchi, 2014). Intrinsic motivation and a positive sense of self are beneficial characteristics for maintaining the individual's self-determined motivation (Podlog & Eklund, 2005). These characteristics allow an individual to perceive the return as positive after accepting and coping with their injury during rehabilitation (Podlog & Eklund, 2005; Tatsumi, 2014; Tatsumi & Takenouchi, 2014). These components and characteristics provide a practitioner with the appropriate tools to determine the readiness to return of an individual (Bauman, 2011). This knowledge is key in the current study that explored how an individual perceived their injury and rehabilitation, and to better understand how this impacted their readiness to return.

Gender Differences

Though there are many differences in the response to injury, one component for response to injury may relate to gender differences. Little research exists regarding gender as a factor relating to the emotional response to athletic injury in competitive sports (Dias, Cruz, & Fonseca, 2014). Researchers have stated males typically demonstrate a more positive emotional response to sport in general compared to females (Dias et al., 2014). Dias et al. (2014) compared pre-competitive emotions among athletes and specifically highlighted gender differences. Fifty-four athletes (30 female and 24 males) participating in handball (n= 8), field hockey (n= 18), and volleyball (n= 28) were given questionnaires relating to pre-competitive emotions and competitive state-anxiety (Dias et al., 2014). The questionnaire used was the *Competitive State Anxiety Inventory* (Dias et al., 2014). This instrument was used to assess the state anxiety related to a competitive environment (Dias et al., 2014). The instrument consisted of 27 items related to cognitive anxiety (7 items), somatic anxiety (8 items), and self-confidence (7 items), and used a

Likert scale ranging from 1 (not at all) to 4 (very much so) (Dias et al., 2014). The second instrument used was the *Inventory of Emotions in Sport*, which is a single item measured inventory (Dias et al., 2014).

The participants completed the questionnaires a half hour before a competition and were instructed there were no right or wrong answers (Dias et al., 2014). The researchers found female athletes experienced a more negative emotional response pre-competition but reported happiness and hope to a higher degree compared to male athletes (Dias et al., 2014). Female athletes' emotional response indicated higher levels of shame, guilt, anger, anxiety, and low self-confidence (Dias et al., 2014). These emotional responses were caused by state anxiety during competition according to Dias et al. (2014). However, there was no statistical difference among male and female athletes related to pre-competitive emotions (Dias et al., 2014). This speculates that gender differences may be present and should be considered when studying psycho-emotional responses to athletic injury and rehabilitation.

Amado, Sánchez, Leo, Sánchez-Oliva, and García- Calvo (2014) examined gender differences in motivation among 1,897 athletes (1378 males and 519 females) who participated in basketball, handball, football, and volleyball. Gender differences and motivation were investigated via questionnaires. The instrument used was the *Self-determined motivation* adapted from Nunez et al. (2006) *Sport Motivation Scale* (Amado et al., 2014). This instrument has a total of 28 items that assess an athlete's different motives of practice (Nunez et al., 2006). The next instrument used was the *Basic Psychological Needs* (Amado et al., 2014). The instrument consisted of 18 items grouped by the three factors: autonomy, completeness, and relatedness (Amado et al., 2014). After consent was given, the questionnaires were given to the participants prior to a scheduled practice (Amado et al., 2014). The results showed male athletes displayed

greater intrinsic and extrinsic motivation and less amotivation compared to female athletes (Amado et al., 2014). The greatest differences between genders was extrinsic motivation, leading the researchers to believe males are more motivated by outside benefits such as rewards, social recognition, exhibitionism, and competition (Amado et al., 2014). This information is beneficial for assessing gender differences related to motivation and athletic injury, as well as in the determination to partake in rehabilitation (Amado et al., 2014).

Summary

An athlete is typically seen as a strong-minded individual who would not allow an injury to set them back in their athletic career. However, research suggests there are many variations of mental toughness and coping mechanisms which lead to athletes dealing with psycho-emotional disturbances as a result to an injury (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). This being said, there are many ways in which a positive outcome can be reached. Understanding motivation and what drives a person to compete and succeed in their sport is a primary factor of a positive outcome (Madrigal & Gill, 2014). However, on the other side, if an athlete experiences a negative response to their injury, underlying factors other than motivation may be the root cause (Madrigal & Gill, 2014). Personal, social, and emotional factors, in addition to motivation, are what drive a person to recover from an injury, and these should be the focus of the rehabilitation process (Wiese-Bjornstal et al., 1998). The rehabilitation process should consist of all of these factors listed, and should include a practitioner who has an educational background in psycho-emotional reaction to injury (Hamson-Utley et al., 2008; Heaney, 2006; Heaney et al., 2015). The relationship between practitioner and patient should also be positive since research states that a practitioner is a vital member of the social support system of an athlete (Yang et al., 2014).

The variety of emotions in which an athlete may go through varies between individuals and should be taken into consideration when determining their readiness to return to sport (Podlog & Eklund, 2005). The emotional response can indicate whether they are experiencing feelings of anxiety, fear, depression, or frustration which may all lead to re-injury and a fear of return to sport (Covassin et al., 2015). The research overall, indicates that an injured athlete experiences a wide variety of thoughts and emotions while they are injured. However, the emotions and thoughts experienced in the different stages of recovery and return to sport are less supported, and therefore require a study such as the current one which aimed to explore psycho-emotional response to athletic injury, rehabilitation, and return to sport.

Chapter 3: Procedures

Introduction

The purpose of this study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness for return in NCAA Division II collegiate athletes. Athlete's careers are dependent on what their bodies can do for them. When athletes suffer from an injury of any kind, their abilities to perform are impaired. These impairments can lead to a number of emotions and feelings that may cause underlying problems to their psychological state (Clement et al., 2015). Recognizing these emotions and addressing them when they arise can lead to a better psychological mindset when returning to their sport after injury (Clement et al., 2013).

Setting

The interviews took place in a NCAA Division II university athletic training room (ATR) in the physician's examination room. This room provided privacy for the protection of the athletes participating in the study. This room also provided an environment for minimal distraction. Interviews took place when the ATR was closed and were conducted individually. In addition to the interviews, the participants wrote journal entries via Google Docs and Google Drive which could be accessed from anywhere at their discretion.

During the study, the injured participants were evaluated and participated in rehabilitation. Rehabilitation took place at a NCAA Division II university in the athletic training room. Most evaluations occurred in a NCAA Division II university athletic training room. Some evaluations needed to be completed at time of injury during a competition or practice. So there were additional locations, which varied between sports and participation venues, throughout the process confidentiality and privacy was maintained.

Population

Participants included athletes who suffered an acute injury sustained during involvement in their recognized sport. If a participant sustained an injury outside of their recognized sport they were excluded. Participants who sustained an acute injury, reported it to their supervising ATC, and began a rehabilitation protocol for said injury were included. Each participant was recruited based on their status as a student-athlete at a NCAA Division II university and were recruited by the supervising ATC in charge of their rehabilitation.

The study included twelve (5 female, 7 males) NCAA Division II collegiate athletes. Two of the twelve participants dropped out of the study prior to completing the exit interview and the readiness to return journal. One of the twelve participants did not receive clearance to return to sport prior to the end of data collection and analysis. Therefore, there are nine complete data sets from the remaining participants and three partial data sets for the other three. Participants were from eight of the 19 varsity sports offered by the NCAA Division II university. The eight sports included women's basketball, men's lacrosse, softball, women's soccer, men's track and field, women's track and field, football, baseball, and wrestling. Participant's ages ranged from 18-22 years. Seven of the twelve identify as White, two identify as Black, and three identify as Hispanic. The athletic year included five freshman, three sophomores, two juniors, and two seniors. Injury location included ankles (2), hip area (3), shoulder (1), knee (2), hamstring (2), ribs (1), and back (1). Injury type included three sprains, five strains, and four others. Days out from participation range from 3 days to 48 days. Participants were recruited through word of mouth from the athletic training staff at a NCAA Division II university.

Instrumentation

This study included qualitative methods in the form of semi-structured interviews and journaling, as well as a demographic survey, which was developed using the components of the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998) (Appendix A). The researcher conducted an initial interview (Table 1) and an exit interview (Table 3). In between the interviews the participants were responsible for completing a check-in log and an injury/rehabilitation journal entry daily (Table 2). Once the athlete had approval from their supervising ATC to return to sport, and the exit interview was completed, they logged a readiness to return to sport journal entry and a check-in log (Table 4) for three days following the exit interview. The initial interview and the exit interview consisted of four questions; both interviews were conducted in a one-on-one setting with the researcher. The journals were completed via an online storage application that was shared with the participant and the researcher. The researcher and participant were the only parties who had access to this application which was password protected. This was personal to participants and each had their own login information.

Researcher as the instrument

I am a white middle class 28-year-old female. I am currently a certified athletic trainer working with two of the 17 Division II NCAA sports. I have been involved with athletic training since the age of 14 when I began to shadow the athletic trainer at my high school. I was also enrolled in the athletic training courses that were offered during high school. I received a Bachelor's degree in athletic training. I have been a certified athletic trainer since 2012 and have been practicing athletic training for four and a half years. I have also been involved with athletics from a young age and have experienced injuries myself. During those injuries, I

experienced a variety of thoughts and emotions as it impacted my ability to participate in athletics. I have professionally dealt with a variety of injuries and conducted rehabilitation for said injuries. I have also dealt with many injured athletes experiencing a variety of thoughts and emotions relating to their injuries. I have seen how it impacted their state-of-mind and their ability to participate in athletics. The experienced thoughts and emotions are present during all aspects of the injury including the rehabilitation process and return to play.

I have developed a trust with the athletes at the NCAA Division II University, which is a positive aspect for me as a researcher. However, this could have impacted the views of the athletes on their participation for the study. They may have felt pressure to participate if they felt I had an influence in their return to play status as well as their recovery time. I attempted to control for this by being very clear in the consent process as to the voluntary nature of the study and that there would be no negative impact on anyone who chose not to participate. As an athletic trainer myself, I might have experienced a judgment to the rehabilitation rendered for the injury by other athletic trainers. Despite those possibilities, I remained as unbiased as possible and a third party observer. I made it known my intentions were to uncover the truth and not hinder that process in any way throughout data collection. During data collection, I allowed the participants to describe their experience as thoroughly as possible and made it known that I would not break confidentially, and kept any comments made during data collection between the participant and myself as a researcher. My experience as an athletic trainer enabled me to explore the study of psycho-emotional response to athletic injury and rehabilitation in NCAA athletes.

Research Design

This study used qualitative methods to investigate the athletes at a NCAA Division II institution. Approval from the Institutional Review Board (IRB) was obtained prior to the study beginning (Appendix B). A letter of informed participation was given to the head athletic trainer, head coaches, and athletic director of the institution to notify them of the study (Appendix C). The letter consisted of a statement regarding the study and their signature indicated they agree with and understand the student-athlete's participation in the study. The study explored the psycho-emotional responses to athletic injury and rehabilitation of the athletes at this particular institution. The institution has seven certified athletic trainers (ATCs) on staff responsible for the care of the student-athletes. When an athlete reported an acute injury to their supervising ATC, the supervising ATC then notified the primary researcher of the athlete's current status. This referral process kept the standards set forth by HIPAA law by keeping the details of the athlete's injury confidential. This study strictly looked at acute injury and required minimal details unless given by the athlete themselves during the data collection process. Minimal details about the injury include body part, side, when the injury occurred, how the injury occurred, and how long the athlete would be restricted from participating. Other details include gender, age, ethnicity, and sport experience. These details are included in the demographic form (Appendix A) and were completed at the time of the initial interview along with the informed consent form. The supervising ATCs had a minor role in the study and were asked to perform additional tasks such as notifying the researcher of complication to the injury, which may prolong the process, i.e., adherence, referrals, changes to the rehabilitation, and clearance to participate after injury. The supervising ATC was primarily responsible for the initial evaluation of the injury, determining the prognosis of the injury, any referrals that the

injury may need, developing the rehabilitation protocol for the injury, supervising the rehabilitation for the injury, as well as clearing the athlete to participate.

When notifying the primary researcher of an injured athlete, the supervising ATC provided the athlete's name, phone, and email address. The primary researcher then phoned the athlete to give them a brief summary of the study and asked if they would like to participate in the study. The researcher reminded the student-athlete that participation was completely voluntary and would in no way impact their rehabilitation, their playing status, and relationships with coaches and supervising ATCs. If the athlete agreed over the phone to participate, the primary researcher would confirm their email address and ask them to come to the ATR to sign the informed consent (see Appendix B). Their visit to the athletic training room was also time to conduct the initial interview (Table 1). The phone call occurred within twelve hours of the supervising ATC notifying the primary researcher of the injury. If the injury occurred away from the institution at an away competition, an interview was conducted over the phone within 12 hours of the injury. In order for an interview to take place and data collection to begin, the athlete needed to sign a consent form. The primary researcher asked once more for the supervising ATC to assist. The primary researcher asked them to obtain the informed consent and to confirm this they took a picture of the form and sent the picture to the primary researcher.

After the informed consent had been signed, the athlete was assigned a number and this number was connected with their identity during the study. The primary researcher then conducted the interview with the participant. As a supervising ATC at the institution, the primary researcher was also responsible for the care of athletes. If an athlete that is cared for by the primary researcher became injured and agreed to participate in the study, a second researcher was brought in to conduct the interview. The second researcher had previous experience with

qualitative data collection and analysis. This strengthened the study design by providing these athletes with an unbiased environment in which they could feel comfortable expressing themselves. The beginning of the initial interview reviewed the purpose of this study and described the remaining actions that needed to be completed. The procedures included an initial interview, journaling done by the participant, and finally an exit interview followed by final journaling done by the participant. Using interviews and participant journaling as qualitative methods of data collection gave the researcher an overall feeling of the individual during this traumatic moment of their athletic careers (Creswell, 2007). The overall study used a phenomenological research method to assess common experiences between multiple individuals and discover significant statements to reach major themes from the shared experiences (Creswell, 2007; Marshall & Rossman, 2011).

The initial interview began with demographics and included sport, gender, position, age, injury, prognosis, body part, side injured, when they were injured, and how the injury occurred (Appendix A). Once demographics had been taken, the interviewer began with the initial interview questions. The initial interview included four open-ended questions outlined in Table 1. The initial interview looked at how the athlete was feeling about their injury, how they thought their injury would impact them and their sport, and what thoughts, emotions, and motivations they had about their injury and rehabilitation. The interview was recorded with two digital audio recording devices and took approximately 15 minutes to complete. The interview was semi-structured with open-ended questions. This allowed the interviewer to expand on or clarify the answers given by the participant and ask additional questions if necessary. The primary researcher acted as the interviewer.

Table 1. Initial Interview Questions.

Initial Interview Questions: Initial Interaction
1. Can you describe your thoughts, emotions, and motivations regarding your current injury?
2. What experiences (social, personal, and physical) do you anticipate having with this injury?
3. How do you foresee this injury impacting your participation?
4. How do you foresee your rehabilitation experience going?

Once the initial interview was completed, the interviewer confirmed the participant's email address. The primary researcher informed the participants that a folder in Google Drive would be shared with them via their Google account. The only people who had access to the Google Drive folder were the primary researcher and the participant. A separate Google Drive folder was created for each participant. The Google Doc operated as a narrative inquiry via journal records (Marshall & Rossman, 2011). Once the primary researcher created the folder as the owner, the primary researcher then shared the document with the participant. The Google Drive folder was labeled with the participant's identification number, i.e. "Participant 1", and contained two folders. The first folder was labeled "injury/rehabilitation journals" and the second was labeled "readiness to return journal." The folders contained blank versions of the Google Docs. The Google Docs included the check-in log and the question (Appendix D).

Google Docs allowed access via the application version, which could be accessed by means of a cellular phone or tablet as well as via the Internet through their student Gmail account. The participant was informed they could download the application or use their Google account to access the folders. The primary researcher encouraged the application version for ease of recording in real time. Once the invitation was accepted, the primary researcher could keep track of the participant's records to ensure they were journaling daily during the process. If

record keeping became an issue, the participant was reminded via email to continue their journal keeping. If their journaling was incomplete due to the lack of upkeep, they were still included in the study. The results note the lack of upkeep and the data was recorded with the information that was provided.

The injury/rehabilitation journal (Table 2) was intended to be a narrative inquiry to capture the participant's thoughts, emotions, and motivations experienced throughout their injury and throughout their rehabilitation period. The check-in log and journal recording were the only material collected during the time of injury and rehabilitation. The Google Doc contained one question and a five-item assessment check-in log. Once complete the participant answered the question addressed to them as best they could and with as much detail as possible. The participant began journaling the day after the initial interview and continued to record one journal entry per day. Once their supervising ATC had cleared them to return to play, an exit interview was conducted (Table 3). The participant was asked to complete a second journal and check-in log upon completion of the exit interview to record thoughts, emotions, and motivations experienced in their return. This readiness to return journal and check-in log (Table 4) was completed for three days after the exit interview.

Table 2. Injury/Rehabilitation Journal Inquiry Questions

Injury/Rehabilitation Check-in Log	
Date:	
Have you completed your rehabilitation today?	
Answer and rate the following questions.	**Rating: 1= extremely negative; 2= negative; 3= average; 4= positive; 5= extremely positive**
Attitude towards your injury and rehabilitation (1-5)	
Communication with my athletic trainer (1-5)	
Communication with my coaches/teammates (1-5)	
Support from my athletic trainer (1-5)	
Support from my coach/teammates (1-5)	
Belief in my rehabilitation and return (1-5)	

Injury/Rehabilitation Journal Inquiry Questions: Daily Reference
1. What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your injury/rehabilitation today?

The supervising ATC determined when the participant could return to their sport. Once the supervising ATC had determined their return to play date, they informed the primary researcher and an exit interview was scheduled for the day of the return. The exit interview included three questions addressing the participant's outlook on their injury, their views on their return to play, and views on their rehabilitation. The exit interview questions are shown in Table 3. The interview process mimicked the procedures used for the initial interview. The interview was recorded on two devices and lasted approximately 15 minutes. The structure of the interview was open-ended and allowed the interviewer to expand on and clarify the answers given if necessary. Once again, the primary researcher acted as the interviewer.

Table 3. Exit Interview Questions

Exit Interview Questions: Exit Interaction
1. Can you describe your thoughts, emotions, and motivations regarding your current injury?
2. What influenced or affected your experience with your injury/rehabilitation?
3. How did this experience of being injured and going through the rehabilitation for your injury impact your return to play?
4. Inquiries from injury/rehabilitation check-in log that seems outstanding.

Once the exit interview was complete, the participant was reminded of the readiness to return journal and check-in log they would complete for three days following the exit interview. This journal assessed the participant's thoughts, emotions, and motivations experienced upon return to their sport. The procedures for the second journal mimicked the procedures from the first journal. The participants received a second Google Drive folder labeled readiness to return journal. They completed the question as best they could and with as much detail as they were able after completing the five-item check-in log.

Table 4. Readiness to Return Journal Inquiry Questions

Readiness to Return Check-in Log	
Date:	
Have you completed rehabilitation today?	
Did you participate today?	
Answer and rate the following questions.	**Rating: 1= extremely negative; 2= negative; 3= average; 4= positive; 5= extremely positive**
Attitude towards your return and readiness (1-5)	
Communication with my athletic trainer (1-5)	
Communication with my coaches/teammates (1-5)	
Support from my athletic trainer (1-5)	
Support from my coach/teammates (1-5)	
Belief in my return and abilities (1-5)	

Readiness to Return Journal Inquiry Question: Daily Reference
1. What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your return/participation today?

Trustworthiness

During the data collection process, the researcher was aware of her attitude and feelings during the process by documenting them in a journal. This allowed the researcher to remain unbiased as possible and monitor her own feelings and emotions during the process of data collection and data analysis. The researcher had a limited knowledge of qualitative research and sought additional assistance from her thesis committee member who was experienced in conducting qualitative research during the process. The primary researcher utilized a second researcher as a second coder for data analysis to ensure an unbiased opinion of the codes, sub-themes, and general themes. The second researcher had previous experience with the qualitative analysis measurements that were utilized in this study.

Ethical Considerations

During the research process, the researcher was responsible for maintaining the anonymity and confidentiality of the participants. The participants had numbers assigned to them and no names were used during the process. Any documents pertaining to the research were secured and access was only granted to the primary researcher involved. Interviews were conducted during a time the facilities were closed and others were not around, to maintain confidentiality and privacy of the participants. The interviews included an assessment of the participants' emotions, as well as awareness of their mental state. If, for any reason, issues arose due to their awareness, they were referred to the appropriate personnel for further assistance.

Treatment of Data/Data Analysis

Recorded interviews are common in qualitative research because it gives the researcher rich data from the participant with emotions and gestures for interpretation of the words and stories described (Creswell, 2007). When researchers transcribe interviews, it is common to lose those emotions and gestures from the initial interview (Creswell, 2007). Understanding an individual's meaning behind their words can be lost making transcribing and interpretation difficult (Creswell, 2007). Developing meanings or codes from the transcribed words allows for some interpretations to be saved during analysis (Creswell, 2007). From these codes, greater themes and sub-themes can emerge and through understanding the analyzed transcription, better comprehension develops (Creswell, 2007). Thus, line-by-line coding is key when interpreting the interviews and developing the common themes (Creswell, 2007; Marshall & Rossman, 2011). This explains why line-by-line coding was the primary analysis tool in this study. The voice of the individual needed to be heard in order to develop the voice of the many. Line-by-

line coding ensured that participants' responses were not lost in translation during the analysis of the interview (Creswell, 2007; Marshall & Rossman, 2011).

Once a participant completed the three stages of the study, their material was combined into a password protected file and awaited interpretation. The researcher transcribed the recorded interviews into a written script verbatim into a word document, as well as organized the journal entries into the password-protected file separated by days. Once the interviews were in script form and the journals were organized, line-by-line coding was conducted. The researcher read each individual line and develop codes found within each statement. Once this was completed the common codes were then be categorized into sub-themes. The sub-themes were used to categorize into greater, general themes. The results reported sub-themes and general themes from the initial interview, the journals, and the exit interview. Sub-themes and general themes were used to unite the responses of the participants while maintaining their individual voice.

Before the greater, general themes could emerge, the second researcher was asked to code the information on their own. The second researcher had previous experience with qualitative research data analysis. They received their own copy of the transcribed interviews and journal records, and performed line-by-line coding. Once this was completed, the first and second researcher met and discussed their findings to compare their analyses. Once completed, the primary researcher developed sub-themes and general themes based on the codes agreed upon by the two coders. Once the sub-themes and general themes were established between coders, the general themes and sub-themes were examined according to the research questions.

The results from the initial interview and the injury/rehabilitation journal were used to address common responses and reactions to athletic injury (Research Question 1) and the

experience in response to sustaining an athletic injury (Research Question 2), as well as the common responses and reactions to rehabilitation (Research Question 3). The results from the exit interviews in conjunction with the readiness to return journal were used when addressing common factors on readiness to return to sport (Research Question 4). The demographics form in conjunction with the raw data were used to address differences from athletic injury, rehabilitation, and readiness (Research Question 5).

Chapter 4: Results

Introduction

The purpose of this study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness for return in NCAA Division II collegiate athletes in real time. Instrumentation included an initial interview, completion of a daily injury and rehabilitation journal, an exit interview, and a follow-up readiness to return journal. The participants included twelve (5 females, 7 males) NCAA Division II collegiate athletes who sustained an athletic injury that removed them from play for at least three days. A detailed description of the demographics is found in Table 5.

Table 5. Descriptive Statistics of Demographic Information.

Participant	Gender	Athletic Year	Sport	Body Part	Injury Type	Days Out
1	F	Freshmen	Basketball	Ankle	Sprain	37
2	M	Sophomore	Lacrosse	Groin	Strain	9
3	M	Sophomore	Lacrosse	Groin	Strain	6
4	F	Senior	Softball	Shoulder	Vascular Injury	48
5	F	Sophomore	Soccer	Knee	Sprain	16
6	M	Freshmen	Track/Field	Knee	Cartilage Injury	7
7	M	Freshmen	Wrestling	Ribs	Bruise	12
8	F	Freshmen	Track/Field	Hamstring	Strain	3
9	M	Freshmen	Lacrosse	Hip Flexor	Strain	11
10	M	Junior	Football	Ankle	Sprain	20
11	M	Junior	Baseball	Hamstring	Strain	17
12	F	Senior	Basketball	Back	Disk Injury	24

Twelve participants completed the initial interview and injury and rehabilitation journal. Only nine of the twelve participants completed the exit interview and the readiness to return journal, in addition to the initial interview and injury and rehabilitation journal. The data from all four instrumentation measurements were analyzed and emergent themes were discovered.

Analysis of Data

Each participant completed an informed consent form followed by an initial interview after suffering an injury that removed him or her from participation for at least three days. The interview consisted of four primary questions regarding different aspects of athletic injury, rehabilitation, and readiness to return. The raw data from all twelve initial interviews was analyzed. This analysis for the initial interviews produced a total of 24 raw themes, which were then grouped into five general themes. The raw themes and general themes can be found in Appendix E. The raw themes include frequency distributions in association with each of the four questions from the initial interview. The frequency distribution indicated the number of participants who responded within that particular theme. The general themes for the initial interview are listed below:

1. Emotional disturbances due to injury;
2. Injury impacts social relationships;
3. Methods of coping with injury;
4. Motivated to return despite injury; and
5. Athlete predicts rehab/return outcomes.

After the initial interview, the participants completed daily injury and rehabilitation journals consisting of a check-in log (Appendix D), which was used to assess their experience in question four of the exit interview (Table 3). They were also required to answer one question per day assessing their experience with their injury and rehabilitation. The injury and rehabilitation journal was analyzed for content as a whole as opposed to individual days. This study was concerned with the experience as a whole. The injury and rehabilitation journal was analyzed and produced 10 raw themes and four general themes (Appendix E). A frequency distribution was utilized for the raw themes, similar to the initial interview. The general themes for the injury and rehabilitation journal are listed below:

1. Injury caused emotional disturbances during rehabilitation;
2. Injury and rehabilitation disrupted social support system;
3. Injury impacted views of return; and
4. Coping to injury and rehabilitation.

Once the participant was determined eligible for return to play by their supervising ATCs, they were scheduled for an exit interview. The analysis for the exit interview consisted of raw data for nine of the twelve participants. Two participants dropped out of the study and one participant was not determined eligible in time for analysis. The exit interview consisted of four questions inquiring about the injury and rehabilitation experience in addition to how that experience impacted the participant's view of returning to sport. This data produced 29 raw themes and five general themes (Appendix E). A frequency distribution for participant responses was utilized with this data as well. The general themes for the exit interview are as follows:

1. Injury produced different coping methods;
2. Emotional disruptions due to injury or rehabilitation;

3. Emotional disruptions to return;
4. Injury impacted social relationships; and
5. Motivated for return.

Finally, the participant, now cleared for return to sport, completed a readiness to return daily journal. This journal was similar in design to the injury and rehabilitation daily journal, but was only completed for three days post clearance. The daily journals consisted of responses from nine of twelve participants because the three missing participants did not complete an exit interview. The raw data produced six raw themes and four general themes (Appendix E). The raw themes for this data also include a frequency distribution. The general themes for the readiness to return journal are as follows:

1. Reaction to return;
2. Emotional disruption from return;
3. Emotional disruption due to injury; and
4. Positive response from social support upon return.

The four data sets were further analyzed for greater, emergent themes. The data as a whole produced four emergent themes. The emergent themes were consistent throughout the data. The raw data and raw themes indicated three or more times were deemed as consistent and used to define the general and emergent themes. These consistencies were repeated throughout all stages of the data leading to the emergent themes discovered. The emergent themes are as follows:

1. Emotional reactions to injury;
2. Injury produces social implications;

3. Motivation as a driving factor for recovery: and
4. Rehabilitation experience impacts view of injury and return.

Each of these emergent themes is interpreted with additional data below.

Emotional reactions to injury

Emotional reaction to injury was consistent throughout all twelve participants. Each participant experienced some variation of an emotional or mood state disruption due to their injury at some point in their overall experience. Common negative emotional disruptions experienced by the participants were feelings of fear, anxiety, depression, and anger. Participant number one experienced feelings of fear in regards to re-injury; the participant stated, "I'm ready to play but I will be scared at first to go back to the court." Another participant discussed her negative emotional impact by stating:

> Well it's painful. And it kind of made me feel down. I tend to get injured this time of year and it takes a long time to get better. So having this small injury right now kind of put a lot of stress on me. And it stressed me out. I can't compete. And certain people miss me and I can't compete since I've been here. So I'm a feeling a little bit depressed. Sometimes when I think about it and think about where I'm coming from with it. (Participant 8).

This participant has a previous history of being injured and utilizes that information as a way to determine her negative emotional response. The participant feels "down" and "stressed" and "depressed" from being injured. These are important indicators of how the athlete is having an emotional disruption from their normal mood state.

Participants also experience positive emotional reactions to being injured. These positive reactions included feelings of hope and maintaining a positive attitude during their experience. However, eleven participants stated at one time or another feelings of a negative emotional reaction. The negative emotional reaction was more common at initial injury and some carried throughout the experience. One participant utilized her knowledge of previous injures to adjust her mood and emotions from negative to positive. The participant stated:

> One thing that I kept thinking about with this is when I hurt my elbow. I was out for a really long time. And I kept thinking about how negative I was with that last injury that I couldn't be as negative with this injury. And I couldn't necessarily baby it. So I just tried to keep pushing. So I think my last serious injury helped with this one. I was able to automatically have a positive mindset about anything. So they told me things were still messed up. I was reminded it's okay. And it would be fine as long as it's fixable (Participant 12).

The participant would occasionally have a setback of their mood but would return to the positive outlook in the experience. There were only a few participants that would claim the positive attitude and positive emotional state for the majority of their experience. The mood change and positive mindset was seen consistently throughout the raw data.

Participant one was particularly positive for her injury and return. She expressed feelings of hope as her positive emotion. She reported having a positive attitude early in the process, question one from the initial interview, and maintained a relatively positive attitude throughout the process. Her answer for question one in the initial interview was:

> Well this is my first time actually getting an ankle sprain. I never had one before honestly. And I've never had as much swelling as it has happened in my injury. And it's very painful. I can't walk on it or put pressure on it. So now I'm on crutches and I've never been on crutches before either. So, yeah I am just hoping for a fast recovery (Participant 1).

This participant was out for a majority of the season and was still determined to return even though she would not return to play. She expressed ups and downs of emotional changes but most of her self-reports indicated she experienced a positive attitude toward her injury. In her response to question four in the exit interview she had this to say:

> You know, I usually have a positive attitude. It's just at first, it was pretty scary because I'm not used to it but other than that all the rehabilitation and stuff helped. So I know I was doing things to make it better instead of just sitting around watching not doing anything, like exercises that are actually going to help (Participant 1).

Even though she experienced the positive outlook and positive attitude toward her injury and her return, this participant still experienced negative feelings such as fear, sadness, and anxiousness. This was common among the participants. Eleven of the twelve participants experienced fear and a sense of unknown when asked about their emotions, thoughts, and motivations regarding their injury. This is seen in the sub-themes that were derived from the raw data (Appendix F).

Injury produces social implications

Participants throughout the study experienced social implications due to being injured. These implications were a result of their support system (peers, teammates, coaches, and/or supervising ATC) having a positive or negative interaction with participants. The participants

who experienced negative social implications discussed feelings of isolation or exclusion from the team. One participant discussed his social interactions with teammates as follows:

> It's just because I think that I'm not around. So they don't talk to me all the time. I guess they don't really think about me, type deal. And they don't see me every day. So they're like whatever about it. When you go missing from something it's kind of like everyone just forgets about you. So I think that's the main reason, I'm not around that much anymore like I used to be before I got injured (Participant 11).

The examples from this statement can be used to support the participant's view of the negative social support he received from his teammates. This participant felt he was being excluded from the team simply because he was injured.

The support of teammates was varied as well. Some participants showed positive interactions with their teammates and felt they were supported throughout their experiences. They felt they were still part of the team and attended team activities when they could. Most of the participants continued to participate in team activities such as attending practices and games. This inclusion to the team provided them with a sense of belonging to the team even though they were incapable of physically contributing as an active player. One participant stated the team support was overwhelming and unexpected:

> My team, maybe not all of them, but most of them were pretty upset that I wasn't traveling with them and playing for my senior game. But I mean the support from them went way past what I would even think. But that has to go with the bond we've created over a tough season and it would be able to make it through the season without my team. So I definitely wouldn't have made it through this without them. So they will check up on me now even though the season is over (Participant 12).

Overall, each participant felt they needed to be a part of the team in any way they could to maintain that feeling of inclusion and avoid the feelings of isolation from the team. The social support they received from their teammates was significant to them whether it was positive or negative support. Positive support indicated a feeling of caring as experienced from Participants 1, 2, 10, and 12. Negative support indicated a lack of caring as experienced by Participants 4, 9, and 11. It would also seem the positive and negative social support was reflected in their return as well. Both emotional outlooks seemed to impact their participant's drive to return. Positive social support lead to motivations to support their teammates and help contribute to the team, and negative social support lead to motivations of trying to prove themselves to others.

Other social support reported by the participants was from coaches. Self-reports from the participants indicated the coaches were concerned about the well-being of the individual and inquired about their injury and their health status. One participant felt this was beneficial in knowing they were concerned; they stated:

> Everyone was actually pretty cool. No one seemed to like "oh it's the injured guy." Everyone seemed like they were concerned a little bit about my ankle. It was kind of funny. I don't think the coaches realized how bad it was until they saw it because then they were all grossed out. They told me to just get better and get back for spring ball and they were pretty understanding about things. It felt good actually. It helped I wasn't completely out of everything because after a week I was able to lift upper body and stuff. So it wasn't like I was doing nothing. I still got to participate so it felt like I wasn't slacking off or anything (Participant 10).

The support that was demonstrated by the coaches had a positive impact on the support felt by the participant. He felt included with the team and in return his outlook for recovery was positive as well. In addition, other participants had similar positive experiences with their coaches.

There was also somewhat of a lack of support from coaches in terms of "checking-in" with the participants. One participant felt it wasn't the coach's role to inquire about the injury:

> So coach/teammate support overall, I would say that coach kind of doesn't get involved a whole lot obviously. He's not a doctor or professional in that regard. He kind of just tells us do what we need to do to get back. That's kind of all we get from him. And kind of the same deal with teammates. It not like we can really tell each other like here's what you need to do. Or anything like that, so I didn't really think there was a lot of support coming from the teammates or coaches from that aspect (Participant 3).

This example shows the need for the coach as well as teammates to inquire about the participant and their injury was unnecessary. This particular participant seemed unphased by the lack of support, whereas another participant was angered by a lack of support from his coaches and the actions following. The participant reported his frustration in his injury and rehabilitation journal:

> I am extremely pissed off with the whole situation. I had my jerseys taken from me last night for my replacement to go on our weekend trip. This is frustrating because I have been working all week to get ready to play and the decision was made without consulting me on how I feel. I feel like the coaches gave up too early on me and I do not appreciate it. In a positive note I will not practice and have the weekend off so that gives me more time to get to 100% healthy (Participant 11).

This example shows the participant felt the coaches were quick to give up on him and were no longer caring for the participant and his injury. It was upsetting to the participant that the support

from his coaches was not there so soon after being injured. However, he was quick to turn around and find the positive from not traveling.

The other social implications the participants experienced when injured was support from their supervising ATC. The supervising ATC was a consistent variable to all participants' overall experience. Every participant interacted with his or her supervising ATC on a daily or weekly basis. Some participants experienced negative implications from these interactions and others had positive implications. The consistency over the course of the experience showed that the supervising ATC had an impact on the attitude of the participant's injury and experience as a whole. For example, participant five experienced early negative interactions due to the uncertainty of her injury and diagnosis. Participant five reported minimal communication with her supervising ATC in addition to the minimal communication they had with her coaches. Once the diagnosis was determined, the negative implications turned to positives and the relationship was re-established between the participant and her supervising ATC as well as her coaches.

Positive implications from interactions with their supervising ATC were also reported. These reports showed that when the supervising ATC was positive about the injury and the situation, the participant mimicked these positive feelings. These positive interactions can also include the participant's confidence in the supervising ATC. Six of the twelve participants mentioned at some point during their experience a positive interaction or confidence in their supervising ATC. One participant discussed this relationship and how it was beneficial to her return:

> I think the one big thing for rehabilitation is the (athletic) trainer. The (athletic) trainer has a huge impact. She has a positivity and she just lays everything out and explains this is where we need to get you and eventually you start seeing a vision. And I think when

> you can start to see an end to it there is a positive side and you're going to heal. It makes it much easier. Because I mean at my junior college, the (athletic) trainer didn't really explain it and it was kind of like where do I go from here. So I think the rehabilitation really helps depending on the (athletic) trainer. And I have a good one. And then just the positive attitude I have and the people around you like your teammate and family saying it will be fine. I think just social impacts have a big impact on rehabilitation for me. And overall just my attitude. If I have a bad attitude or if I don't do rehabilitation or don't take it seriously, I know I'm not going to heal right or as fast (Participant 12).

This particular participant felt supported by her supervising ATC and felt it led to an easy recovery. This participant also felt the social support like friends and family was beneficial to her recovery and the process leading to it. Participant nine stated, "There was some good support and the rehabilitation I was pretty confident in and what I needed to get better."

Negative social interactions with supervising ATCs were also reported. A few participants did not feel confident in their rehabilitation or their supervising ATC and reported it as negative social support. Most commonly the participants reported feelings of abandonment when their supervising ATCs were traveling and they were left alone to do rehabilitation. One participant mentioned this a few times during their experience:

> It is difficult to do rehab when my (athletic) trainer goes out of town traveling with the team. When my (athletic) trainer is here I can do it no problem (Participant 1).

She goes on to mention it a few more times during her injury and rehabilitation journal and even mentions she wished she could travel with them. It would seem that the participants were more comfortable performing or communicating with their supervising ATCs if they saw them on a

regular basis. One participant was wary about discussing questions with her supervising ATC because she was afraid of coming off as need. The participant stated:

> Last night and during the day yesterday I went a little overboard without knowing. I happened to be lifting many things I should not have with my right arm forgetting that I shouldn't be using it as often as I usually do. Along with not lifting anything over 5lbs. I noticed in the night that my hand had become a little swollen in a new place. I am a little worried because I know that isn't a good sign and I need to be better about not using my right hand. But I also don't want to have to keep asking for help. I know it is my doctor and athletic trainer's job to help, but I feel like a nag constantly asking if "this is normal" or if I need to worry about something because I am so unfamiliar with the situation I am in. I know it is good for me to ask because I don't want to injure myself more than I already am and want to make this recovery process as easy as possible (Participant 4).

This participant endured a new injury and was unsure about how much of her normal daily living would be impacted. She needed reassurance from these people with a greater knowledge but did not feel comfortable asking for it because she was afraid of the perception it would create.

The participants that felt they had a positive connection to their social support seemed to have a more positive outlook on their injury as well as their recovery and their return. They felt cared for and comforted in a time that was devastating to them which may have ultimately led to their recovery. Negative social support seemed to have put a strain on the participant in a psychological sense. However, depending on the social support received they used it for their return to get back to what they enjoyed and in some cases to prove others wrong.

Motivation as a driving factor for recovery

Across all participants motivation was a key factor for recovery and return. Several participants reported their need to return to sport as quickly as possible and by any means necessary. Motivations ranged from wanting to return to help the team and wanting to be a part of sport again. One athlete's motivation to return is stated here:

> I'm excited to get back on the court because it's really painful to not play. Even though you really want to. Sometimes I forget I'm injured and when there's group message about basketball. And they ask you want to go play like 5 on 5, I forget that I'm hurt and then it sucks remembering. So yeah that's probably the worst not playing the sport you love (Participant 1).

This participant experienced a long rehabilitation process and maintained her need to return to sport because she loves the sport. This participant also displayed signs of intrinsic motivation by doing rehabilitation on her own, even during off days. Though the participant was out for the remainder of the season, she was determined to recover.

Other athletes were determined to return for the sake of their team or their team perception. The participants that wanted to return to sport because they felt their team was dependent on them was based on their leadership role on the team or due to low numbers on the roster. Participant five stated, "We really need people to be out there playing. So I guess to get better and be out there is motivation." Another participant wanted to return because he felt his absence created a hole in the team leadership roles. The participant stated:

> My emotions are not very happy because I feel as I am out my team has lost part of its leadership. With that my motivation is to really keep pushing at getting past this injury

> because I do not need our team to take a step back due to that they need offensive skills from a player (Participant 2).

This participant believes his absence from the team due to injury and role as leader are impacting the team in a negative way. This leads to the motivation for return being extrinsically driven and are not solely intrinsically driven. The participant also feels the team is dependent on his skills in addition to his leadership abilities on the field.

When directly asked about their motivations regarding their injury, nine of the twelve participants stated they were motivated to return. These motivations were focused on returning to their sport while some were motivated to return for their team or regaining their status back upon return. The most frequently occurring statements included wanting to return to sport. Participant ten wanted to return to avoid a certain perception from his team. The participant did not want to be viewed as weak in front of his teammates. The athlete stated, "I got up and I tried to be super tough about it." This particular participant stated his perception of weakness was a way to motivated him to return from his injury. He later states that his teammates and coaches were supportive with his injury. But the worry from his team perception was the primary driving factor to return as soon as possible.

There was a difference in different types of motivation for two specific participants. Participant one displayed self-reports of intrinsic motivation while participant two displayed self-reports of extrinsic motivations. There were differences in their motivations to return. As stated previously participant two was eager to return to fulfill his leadership role on the team similar to personal importance. Participant one was eager to return to sport for satisfaction and enjoyment.

Rehabilitation experience impacts view of injury and return

The rehabilitation experience impacted the injury and the return in a few different ways. The theme of the rehabilitation can have an impact on the outcome of the recovery. If the athlete views the rehabilitation as negative, the chances are the athlete's attitude toward their injury and their return will be negative as well. The participants who viewed their return and injury as negative, either started in a negative mindset leading to the rehabilitation experience being negative, or the rehabilitation experience was negative leading to negative feelings for return. This theme was not always apparent but some participants did report positive outlooks for return and experienced a negative rehabilitation environment leading to hesitation for return.

Participant eleven reported a positive attitude for his return and when he experienced a few negative repercussions from rehabilitation was quick to reverse his attitude about his return. Participant eleven mentions hopefulness for his rehabilitation, "Hopefully I foresee it going really well." This same participant only few days later said:

> I had a very frustrating weekend. My hamstring does not seem to get better, seems like progression has stopped. I went to watch the baseball team play this weekend. Maybe one of the worst ideas I could've had. Mentally drained me to sit in the stands instead of being in the dugout with my team. Also I had a ton of mixed emotions, as my replacement played pretty good. While I am happy for him because he is my friend and teammate, I cannot help but think what that will do to my playing time when I return. If I do get a chance to play again (Participant 11).

In return, it would seem that small negative moments can lead to a larger implication like a change in emotional state and change in playing status for an athlete as witnessed by this participant. This participant eventually regained a positive attitude on occasion but maintained

the negative outlook for recovery and return from the injury. These attitudes taken by the participants show readiness for return to be negatively impacted.

The negative rehabilitation experience may have an impact of the participant's outlook for recovery. If they experienced a negative attitude, a negative social support associated with rehabilitation, or even a negative physical experience of not recovering they may perceive their rehabilitation as negative. This participant stated:

> Today, I woke up and my hip flexor was feeling okay but after my first class it was giving me seriously sharp pains. I had to walk upstairs for my next class and the pains only got worse. It made me somewhat doubt my rehab was helping until I reflected on where I was before. The rehab is slowly making it better. I usually wake up with pain but I didn't today so I saw that as an exciting improvement. Physically I'm still bad on flexibility but overall just too much use is still painful. Mentally I've been worried about the injury thinking that rushing back will make it worse. I want to get back soon but I can't. Just the pain from waking is enough to tell me I'm not good to run or cut. I'm deciding on taking the elevator when I can now just so I'm not pushing it. Lifting my leg up brings me the second most pain. I just hope the rehab starts to work a little faster (Participant 9).

This example shows that a negative physical experience with an injury can ultimately impact the attitude and the rehabilitation. This particular participant showed these negative outlooks on rehabilitation but quickly realized that, though it seemed like a setback, he was improving in some way.

Some differences occurred between injury/rehabilitation and return. These differences included emotional improvements, confidence in the improvements, and motivational increases.

As previously mentioned, emotional improvements involved the athlete transitioning from negative to positive mood states as the recovery progressed. It was commonly reported that the emotions associated with the initial injury were negative. Participant one even stated, "Well, it sucks that it happened during the season but it's almost toward the end of the season." This same participant goes on to mention later, "Rehab is great, I feel like it is getting my strength back in my ankle." The positive attitude associated with the injury and the rehabilitation show that emotional improvements accompany the physical and environmental positives as well.

Confidence in the improvements associated with rehabilitation and the status of the injury were reported similarly among the participants. They were confident in their ability to recover and return to their sport with the help of their support system, including their supervising ATCs. The relationship between the supervising ATCs and the participant had a big impact on the participant's confidence. Participant five was wary about her injury and her confidence in the recovery was decreased compared to other participants. This lack of confidence can be seen in the following statement, "I have yet to start my rehabilitation because we don't know for sure what is wrong with my knee." Her lack of confidence in the process led to decreases in communication with her coach, teammates, and her supervising ATCs. Once this participant saw there was no significant damage to her knee, her confidence levels rose and transitioned into a positive mood state. She stated, "I'm happy that there is nothing seriously wrong with my knee and I'm sure with the rehab I began today that I will be back soon."

The motivational aspect of the recovery was similar for all but two participants. The participants that did return to sport were motivated from the beginning to recover and overcome the injury. This information is re-stated here with this participant discussing his return in the exit interview:

> I guess it makes me hungry to get back and finally be able to let out all of the frustration. I'm really motivated now. And when I finally get to full speed I'm just going to go as hard as I can because this is my last year. So like any little injury it can all go away. So I'm just going to go 100% every day (Participant 10).

This statement was made later in the data collection process and compared to his previous statements early in the experience:

> I want to get in as fast as I can. So when he says come in twice a day, I'm definitely going to be here twice a day like I'm not going to try and skip anything. And luckily I have a lot of time that I can do that. But it's going to take a while and I will probably try to come in more than twice a day maybe even three times (Participant 10).

This participant maintained his motivation levels for his recovery and return throughout his experience. This was common for ten of the 12 participants, with the exception of the two participants who did not complete data collection. Therefore, the results of their motivation levels to return could not be examined and compared to other participants.

The emergent themes for the current study include: (1) emotional reaction to injury, (2) injury produces social implications, (3) motivations as a driving factor for recovery, and (4) rehabilitation experience impacts view of injury and return. These four emergent themes seemed to be the most prominent themes to come from the raw data. These emergent themes seemed to have the greatest impact on the assessment to discover what experiences athletes undergo while injured, going through rehabilitation, and for their readiness to return to sport.

Chapter 5: Discussion

Introduction

The purpose of this study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness to return in NCAA Division II collegiate athletes in real time. The emergent themes discovered from the raw data include: (1) emotional reactions to injury, (2) injury produces social implications, (3) motivation as a driving factor for recovery, and (4) rehabilitation experience impacts the views of injury and return. These emergent themes were the most consistent themes throughout the raw data across the entire process (injury, rehabilitation and return). It appears that the emergent themes discovered could be directly related to the research questions asked in this study.

Discussion of Emergent Themes

The topic of the research questions include the following: (1) common responses and reactions to athletic injury sustained by collegiate athletes; (2) the experiences of collegiate athletes in response to sustaining an athletic injury; (3) common responses and reactions to rehabilitation of athletic injuries by collegiate athletes; (4) psychological factors that affect the readiness of collegiate athletes on their return to sport; and (5) differences in demographics related to athletic injury, rehabilitation, and readiness. The emergent themes discovered from this study allow us to see that the common responses and reactions to athletic injury sustained by collegiate athletes; these are emotional reactions to the injury, social implications produced by the occurrence of the injury, motivation drives recovery, and the rehabilitation experience impacts the views of injury. The four emergent themes are found to be related to the five research questions. It would seem the emergent themes are also interconnected with one another and can be interchanged within questions.

Emotional Reaction to Injury

Injury can greatly impact an athlete in an emotional way (Wiese-Bjornstal et al., 1998). The athletes in the current study seemed to experience negative emotional impact early in the experience and as recovery progressed, improvements in their mood state began to transition to positive emotions. This finding coincides with the findings from previous research that observed a positive change in mood states throughout the injury experience (Quinn & Fallon, 1999; Madrigal & Gill, 2014). Changes in mood states were caused by situational factors similar to that discussed in the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998). The mood state change from positive to negative, would commonly occur if the situation was negative. An example of these situations include a negative rehabilitation environment, a change in playing status, or negative social interactions. Positive mood states included feelings of hope and confidence which were important in such a devastating time for some participants.

Common negative emotional reactions seemed to take place when the injury first occurred. Participants commonly reported feelings of anger, frustration, sadness, disappointment, anxiety, and a feeling of being upset. These negative emotions coincided with those of other participants from previous research experiencing similar negative emotions relating to their injury (Covassin et al., 2015). Fear was the most commonly reported emotion among the participants. The feeling of fear was directed toward the injury itself, the severity of the injury, and the future implications it could have with things such as playing time and social status on the team. The feeling of fear was re-occurring even after the diagnosis was given and rehabilitation was underway. However, the re-occurring fear was sparse and was triggered by other events such as an increase in time lost and /or complications that would arise with the injury. Other sources of fear include a fear of the unknown for the outcome of the injury and the athlete's future. This

aligns with previous research discussing the emotional response to injury (Wiese-Bjornstal et al., 1998). Another participant reported a feeling of identity loss due to being injured. This participant was unsure about who he was as a person without his sport. This finding is similar to Madrigal and Gill (2014) who looked at an athlete's response to injury based on personal characteristics such as personality, emotional, and behavioral responses. They found that appraisal of an injury can determine how a person's reactions as a result (Madrigal & Gill, 2014). They observed a relationship between negative appraisal leading to negative emotions such as altered self-esteem, a decrease in confidence, and a loss of self-identity (Madrigal & Gill, 2014). This psychological impact can lead to other issues such as altered behavioral problems and emotional responses (Madrigal & Gill, 2014). Behavioral problems can include isolation for social support, malingering, and behavioral coping (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). Emotional responses can include emotional coping, positive outlook, and fear of the unknown (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998). The overall response to injury follows the model created by Wiese-Bjornstal et al. (1998).

Coping habits found in the current study related to previous research in multiple ways. It would seem the participants were grieving during their injured time. However, not every participant reported or showed signs of the five stages as a whole, at least to the knowledge of the researcher. When one of five stages of grief was reported, they were not always seen in the linear fashion described by the Kubler-Ross stage model (1965). This finding was also similar to previous research comparing athletes and terminally ill patients (Madrigal & Gill, 2014). Though the participants did not follow the stage model linearly, there was a common theme among the participants on the stages of grief they did experience. It was common for participants to begin in the anger stage and progress to the depression stage, and finally see the

acceptance stage. However, denial and bargaining were either not present or were not reported. It was also common for the participants to revert back to previous stages after a negative situation. They would experience a negative interaction with social support or a physical setback with their injury leading to sadness or anger. However, once they were able to cope with the situation it seemed they were accepting of the injury and motivated to recover.

All reactions, positive and negative mood state or coping mechanisms, seemed to impact the rehabilitation for the injury and the readiness to return for the athlete. When the emotional reaction was positive during the rehabilitation, it seemed to create a positive outlook for readiness and the return for each athlete who experienced this positive feeling. However, if the emotional reaction was negative then the rehabilitation and readiness were as well. The return seemed to be clouded by a negative outlook as well. Adjustments were made by the participants as needed to return at any cost. The coping mechanisms seemed to be positive in nature when the situation was negative. Rehabilitation time allowed the participants to come to terms with their injury and to make adjustments in order to cope. Coping mechanisms included a positive attitude and a positive outlook for return. When negative situations arose, the participants had initial negative reactions and once adjustments were made using a positive outlook, their attitude improved. This aligns with the research on return to sport and the athlete's experience during rehabilitation (Tatsumi, 2014). Tatsumi (2014) research found that rehabilitation allowed time to cope and accept the injury and made for a more positive rehabilitation environment leading to a positive attitude and outlook. The rehabilitation environment directly impacts the athlete's outlook on their injury and their return to sport (Podlog et al, 2011; Tatsumi, 2014; Tatsumi & Takenouchi, 2014).

Emotional reaction to injury was the most impactful for the research questions presented in the current study. This emergent theme seemed to coincide with the first four research questions including common responses and reactions to athletic injury among these collegiate athletes, an experience of these collegiate athletes in response to athletic injury, common responses and reactions to rehabilitation of athletic injuries, and being a psychological factor that affects the readiness of collegiate athletes to return to sport.

Injury Produces Social Implications

The social implications following an injury are influenced by teammates, coaches, and supervising ATCs. The implication that was most common was the use of ATCs as a social support system. The participants interacted with their ATCs almost every day. It was observed that a positive and supportive relationship between the participant and the ATC would transition to a positive outlook on the injury, recovery, and return to play. This impactful relationship can also transpire negatively due to the daily interactions between both parties. The relationship that transpires between the athlete and an athletic trainer is based on the assumption of the athletic trainer's education (Hamson-Utley et al., 2008). When the athlete feels the athletic trainer is competent and possesses the skills need to help the athlete return to sport, the relationship will have a greater foundation to form (Hamson-Utley et al., 2008). A relationship founded on confidence and trust creates the bond between athlete and athletic trainer. The social implications show that athletic trainers are the primary social support due to the frequency of interactions with the athlete and the rapport they form during these interactions (Yang et al., 2014). Yang et al. (2014) reported athletes felt supported by their athletic trainer leading to the importance of social support from their athletic trainer while in recovery.

Social implications relating to teammates and coaches saw negative and positive outcomes. When the participants felt support by one or both parties, they were eager to return to help their team and they felt included as a team member. They also experienced a more positive attitude toward their injury, their rehabilitation, and their return. When the participants were presented with negative social support from their teammates and/or coaches they seemed to have a negative attitude toward their injury. However, they would use their return and resentment toward their team as a method of motivation to prove them wrong. Feelings of resentment were reported in a study on examining time loss related to injury (Covassin et al., 2015). Resentment toward teammates was found in athletes that experienced severe injury with long spans of time loss (Covassin et al., 2015). The resentment experience by the participants in the current study was in relationship to a negative interaction with coaches.

Negative social support also presented feelings of isolation and alienation. They no longer felt they were part of the team and were on their own for recovery. This disuse of social support is a component in the Integrated Model as a behavioral response to injury (Wiese-Bjornstal et al., 1998). The disuse of social support is a way to cope with an injury. The disuse is not limited to all social support systems but can be selective on who the athlete wants to remain close to (Madrigal & Gill, 2014; Wiese-Bjornstal et al., 1998; Yang et al., 2014). These behavioral responses can be seen in other research studying athletic injuries and the implications that arises during the experience (Almeida et al., 2014; Covassin et al., 2015; Madrigal & Gill, 2014; Podlog et al., 2015; Podlog et al., 2010; Quinn & Fallon, 1999; Tatsumi, 2104; Tatsumi & Takenouchi, 2014; Yang et al., 2014). Overall, social implications are common among the injured athlete population.

Other examples for social implications produced by injury were seen among the demographics. When comparing participants from the same sport who had similar injuries, the social support given to each participant was different according to the individual's report in their injury and rehabilitation journal. One participant who classified himself as a leader and a bigger contributor to the team seemed to have more social support from his teammates as well as his coaches. The other participant spoke of the coaches' and teammates' lack of interest for his injury and status as something that would typically happen. This same participant never classified himself as any sort of major contributor to the team and viewed himself simply as a player. This could be due to personal factors for both participants, as well as the situational factor contributing to the individuals' perception of themselves, similar to that reported in the supporting research (Wiese-Bjornstal et al., 1998). Some personal factors that may contribute to this appraisal are athletic identity, personality, self-perception, motivational orientation, previous history, or coping skills (Wiese-Bjornstal et al., 1998). Some situational factors included level of competition, playing status, teammate influence, and coach influence (Wiese-Bjornstal et al., 1998). All of these factors can impact how individuals perceive themselves, causing them to react to an injury differently.

Personal and situational factors that contribute to the appraisal of the injury appeared in other similar situations. Another comparison was seen for two participants who viewed themselves as major contributors to the team. However, the team dynamic did not seem to be consistent for both participants. One participant reported positive teammate and coaching support, while the other had feelings of isolation leading to his alienation from the team. He also had resentment toward his replacement. The first participant was more supportive of his replacement and confident that upon his return he would resume his place on the field and with

the team. However, the second participant felt he was contributing to the team but also lacked confidence and felt he was easily replaceable while away with his injury. This also can be attributed to the personal factors (personality, athletic identity, and previous history) and situational factors (level of competition, time of season, and coach influence) addressed in the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998). The two participants may view their status on the team in a similar manner but how they perceive their injury and their outcomes may be different, leading to the difference in appraisal.

There was one occurrence of gender differences and the views of the team perception of being injured. A female participant reported positive teammate and coaching support from beginning to end of her experience. She never felt pressured or guilty for being injured by her team or experienced feeling of fear of how they would perceive her. A male participant upon injury immediately experienced feelings of fear of the team perception and did not want to seem weak for being injured or missing workouts due to his injury. This event can also be associated with personal factors (self-perception, gender, and personality) and situational factors (teammate influence, coach influence, and sport philosophy) from the Integrated Model (Wiese-Bjornstal et al., 1998). Previous research on gender differences has not focused on the social implications for sport, nor has it focused on the social implications for response to athletic injury. The differences seen in the current study show the self-perception and personality of each of these athletes may impact the gender differences among these participants.

This emergent theme seemed to answer the first two research questions, as well as discovering differences among different sports, the same sport, and injury type within the demographics. Injury produces social implications was a common response among the collegiate athletes who sustained an injury in this study. As well as being an experience of

collegiate athletes in this study in response to athletic injury, it also addressed differences in demographics relating to athletic injury, rehabilitation, and readiness to return.

Motivation as a Driving Factor for Recovery

Similarities among the participants in the current study included motivation to recover from their injury, motivation to rehabilitate their injury, and motivation to return to play. Though, as previously mentioned, the emotional reactions and the social support system for the participants could have been positive or negative, each athlete was confident he/she would return through displaying high levels of motivation. Motivation, specifically intrinsic motivation, is what drives us in our lives (Ryan & Deci, 2000). This inner-drive to return to their sport was so high that the participants were determined to return regardless of their injury and the severity of the injury. This was seen when the participants wanted to return and as they progressed through rehabilitation.

When the rehabilitation meets the components of basic needs satisfaction (autonomy, relatedness, and competence), the experience led to an increase in motivation to recover and return while maintaining the high levels of motivation displayed at the beginning of the experience. When those needs were not met, however, there were decreases in confidence for return; yet motivation barely wavered from the negative experience because the participants were able to cope with or create the missing needs satisfaction. This finding was similar to that of the research on motivations for outcomes after injury (Podlog & Eklund, 2005; Podlog et al., 2010). The researchers determined that the basic needs of autonomy, relatedness, and competence were characteristic of an athlete's return to sport (Podlog et al., 2010). Podlog et al. (2010) identified autonomy (initiator of one's own skills), competence (belief of skills and ability to use them), and relatedness (feeling of belongingness) as important factors that a positive rehabilitation

experience is built on. All of these factors led to a positive experience, and when intrinsic motivation drives these athletes to return to sport it is important to ensure the basic needs are included in the recovery.

Gender differences for motivation were also seen in the current study between two participants. Though both participants displayed characteristics of intrinsic motivation, the female participant seemed to display internal factors such as enjoyment and inherent satisfaction. The male participant reported personal importance and a need to better himself. Though these differences are subtle, they naturally fall within two different motivation categories on the OIT scale (Ryan & Deci, 2000). Previous research indicates that males will typically display more intrinsic motivations compared to females, while also displaying internal characteristics such as enjoyment and inherent satisfaction (Amado et al, 2014; Lauderdale et al., 2015). However, the current study did not necessary align with this research in regards these two participants' experience. The characteristics displayed by the male were associated with integrated regulation (extrinsic motivation) while the female displayed characteristics of intrinsic regulation (intrinsic motivation) (Ryan & Deci, 2000).

This emergent theme relates to three of the five research questions presented in the current study. Motivation as a driving factor for recovery was an experience for these collegiate athletes in response to sustaining an injury. As well as providing psychological factors that affected the readiness of the collegiate athletes on their return to sport, this emergent theme also provided insight to differences among demographics, specifically in terms of gender differences.

Rehabilitation Experience Impacts View of Injury and Return

Rehabilitation experience greatly impacted the whole experience of the participants in the current study. Most participants displayed confidence in the rehabilitation and their supervising

ATCs to provide the necessary experience to return. If, at any point, the participant was not confident in either factor they would show signs of doubt and negative attitude toward the injury, the recovery, and the return. However, if the experience at any point changed from negative to positive for any reason, the confidence levels would improve as well as the participant's attitude. This is similar to the study conducted on the athletic trainer's perceived abilities and the confidence of their skills (Hamson-Utley et al., 2008). Hamson-Utley et al. (2008) found that a positive relationship between the athlete and the athletic trainer positively impacts the recovery of the athlete. The athlete felt comfortable and confident when the athletic trainer showed competence and displayed abilities to assist with the return of the athlete (Hamson-Utley et al., 2008). This factor resulted in a positive outlook on the injury, the recovery, and the return to sport. Similarly, if these features were not found in an athletic trainer, a rapport was not developed and the outlook would be negative.

The rehabilitation environment had a direct impact on the participant's readiness to return. This relationship was based on the situational and personal factors as well as environmental factors seen in similar research (Tatsumi, 2014; Wiese-Bjornstal et al., 1998). The impact the rehabilitation environment has on the injury and return are similar to the findings in previous research on a similar topic (Tatsumi & Takenouchi, 2014). A positive rehabilitation experience would transition to positive attitude, positive emotions, positive outlook leading to a positive return and the participant feeling ready to return. However, if there were any negative factors associated with the injury, this can immediately transition to a negative outlook on return. All of this ultimately, impacts the adherence to rehabilitation leading to the effectiveness of rehabilitation, and later fear of re-injury and not feeling ready or confident in the return to play.

Ultimately, readiness to return stems from the views of the injury, and the views of injury are greatly impacted by how well the participant thought his/her rehabilitation was going. Poor rehabilitation may cause a poor attitude toward injury, leading to the lack of confidence in readiness to return similar to previous research on the return to play after injury (Herring et al., 2017; Podlog et al., 2011; Podlog et al., 2015). The thoughts and emotions experienced by athletes upon return to their sport may include feelings of fear and anxiety of re-injury, an inability to perform, and/or feelings of isolation or decreases in social support (Herring et al., 2017; Podlog et al., 2011). These negative thoughts and emotions can have a negative impact on an individual's return to sport (Herring et al., 2017; Podlog et al., 2015). When returning to sport, confidence was the most important quality (Herring et al., 2017; Podlog et al., 2015). Athletes who possessed confidence in their recovery, rehabilitation, and return to sport were more likely to have a positive outlook and a more successful return to sport (Herring et al., 2017; Podlog et al., 2015). Confidence starts with the athlete and their appraisal of their injury. If they feel confident in their rehabilitation, they are more likely to have a positive rehabilitation experience or be more equipped to cope with negative situations that arise.

This emergent theme warranted results for two of the five research questions presented in the current study. The rehabilitation experience impacting the view of the injury and the return showed common responses and reactions to rehabilitation of injuries by these collegiate athletes. These collegiate athletes also showed psychological factors that affected their readiness to return to sport.

Summary

These four emergent themes addressed the five research questions for the current study. Common responses and reactions to athletic injury sustained by collegiate athletes were

emotional reactions to injury and injury produces social implications. The experiences of collegiate athletes in response to sustaining an athletic injury were emotional reactions to injury, injury produces social implications, and motivation as a driving factor for recovery. The common responses and reactions to rehabilitation of athletic injury by collegiate athletes were emotional reaction to injury and the rehabilitation experience impacts the view of the injury and return. The psychological factors that affect the readiness of collegiate athletes on their return to sport were emotional reaction to injury, rehabilitation experience impacts the view of the injury and return, and motivation as a driving factor for recovery. The final research question regarding differences in demographics relating to athletic injury, rehabilitation, and readiness were motivation as a driving factor for recovery and injury produces social implications.

Chapter 6: Summary and Conclusions

Summary of results

The purpose of this study was to explore the psycho-emotional response to athletic injury, rehabilitation, and readiness to return in NCAA Division II collegiate athletes by exploring their experiences in real time: at time of injury through rehabilitation and return to sport. The results indicated athletic injury creates a serious disruption to an athlete's life. They experience negative emotions which transition to a positive mood state that allow them to overcome the initial shock of being injured. Their nature of competitiveness and their willingness to overcome obstacles is what seems to drive them. This determination for overcoming the setback of an athletic injury allows them to return to their sport. They seek help when it's needed from their social support in their peers, teammates, coaches, and their athletic trainer. When their social support is not what they expect or need or if they have a negative experience, they are still motivated to overcome the injury and return to their sport. They are reliant on themselves at that point and overcome their situation and achieve their goals to prove themselves. They learn from their previous experiences to return with a positive and determined attitude that comes naturally to them as competitive athletes.

The emergent themes found in the current study are emotional reaction to injury, injury produces social implications, motivation is used as a driving factor for recovery, and rehabilitation experience impacts the views of injury and return. The emotional reactions to injury consisted of negative feelings and thoughts such as anger and frustration. These would transition to positive feelings of hope and confidence. The social implications experienced were as a result of being injured and the athlete depending on their social support system to assist them through their injury and recovery. These social support interactions were not always

positive and would impact the athlete's recovery and rehabilitation. Through the whole experience the one consistency was motivation being used as a driving factor for recovery. The participants consistently described their need to return to their sport making it a goal for return. This was the key factor for motivation for recovery and returning to their sport. The rehabilitation factor was a primary impact on their return and recovery as well. When the rehabilitation experience was negative, the view of the injury and the return to sport were also negative. When this experience transitioned to positive for any given reason, the view of the injury and the return to sport would follow in a positive outlook. Overall, the emergent themes seemed to be interconnected for the current study in regards to answering the research questions.

Practical applications

The results from this study can be of practical benefit to the field of athletic training. The reactions and responses athletes have from sustaining an injury can be utilized during the evaluation, rehabilitation, and the return to play after an injury is sustained. The themes of suppressing the negative nature of an injury and maintaining a positive attitude can benefit an athlete's return to sport. The results from this study show that at initial injury, negative implications ensue and athletes utilize a support system. Factors that allow athletes to overcome the injury include maintaining a positive outlook on the injury, while keeping a positive attitude during rehabilitation and during any complications that arise, and ensuring the support system shows confidence in the athlete upon return. All of these characteristics will also help with avoiding feelings of fear of re-injury and lacking self-confidence for the athletes.

Understanding what motivates the athlete to overcome the repercussions from an injury can also be beneficial for rehabilitative care professionals who work with this population. The knowledge of rehabilitation as a positive environment should be guided with the education these

individuals receive, along with understanding the impact an injury has on athletes. Ensuring the basic needs of autonomy, competence, and relatedness are consistent throughout the experience will also benefit the athlete to return through recovery during rehabilitation.

Applying the findings from this study to the world of athletic training and sports medicine can be guided through the emergent themes. The emotional reactions to injury should be addressed through communication with the athlete and the healthcare provider. This assurance can address negative emotions as they arise, and will ensure a positive and trusting relationship with the athlete and the healthcare provider, thus addressing social implications caused by injury. Making sure the athletes remain with the team during any team activities will provide the injured athlete with some feelings of inclusion. This is done in hopes of maintaining a positive social support through teammates and coaches.

Maintaining these positive relationships in addition to helping the athlete maintain a positive attitude and adjust when necessary, will allow for a positive rehabilitation environment and a confident athlete who is ready for their return to sport. It is also important to remember to be aware of an athlete's drive and motivation to be a part of sports and a team. So providing them with basic needs seen through self-determined motivation will allow them to keep high levels of motivation during their recovery.

Future Research

Future research could benefit from inclusion of other populations. This could include different competitiveness levels such as high school, other collegiate levels, semi-professional, and professional. This would also allow for inclusion of other age groups, as well as different demographics such as gender. By not limiting future research to a specific population, research on this topic could lead to better education of rehabilitative healthcare providers working with

athletes. Future research should also include a more in depth comparison of the psycho-emotional response to athletic injury, rehabilitation, and readiness to return, as well as targeting these in other specific demographics. Future research on this can be conducted with individual variables such as rehabilitation and readiness to return separately, as opposed to the experience as a whole. The current study found an abundance of research for initial injury and rehabilitation. Future research should allow for more in depth look at the return to sport aspect.

Demographics should also be a topic for future research specific to the different phases of injury and recovery and return to sport. Examples would include the type of injury, gender, athletic year, and sport as individual variables as well and not simply combine them as a whole demographic sheet as was done in the current study. This study saw few differences of demographics associated with gender and sport. Perhaps future research should focus on gender and sport specifically instead of having it be an afterthought as was done in the current study.

The journals used in this study were viewed as a single unit. Future research should consider viewing the journals as individual units or viewed as days as opposed to the single unit of measurement like several days combined. This could add a more in depth look at the rehabilitation experience from start to finish, and address common topics in previous research such as the grief model and how athletes respond compared to the normal population. This would also allow for the research to view how an athlete handles the obstacles during their recovery and what coping methods they use to recover.

The findings from the current study add to previous research providing a thorough look into how athletes respond to athletic injury, rehabilitation, and readiness to return. The real time approach the current study utilized produced similar results for responses and reactions to injury compared to previous retrospective approaches (Clement et al., 2015; Covassin et al., 2015; Heil,

1993; Madrigal & Gill, 2014; Podlog et al., 2015; Podlog et al., 2010; Quinn & Fallon, 1999; Wiese-Bjornstal et al., 1998). This leads to the conclusion that athletic injuries are devastating events to athletes, they have a vivid recollection of the injuries event, and they utilize the experience as coping methods to overcome future injuries. The current study also addressed motivation in relation to injury, rehabilitation, and readiness to return. Motivation is a key component in life and is used to recover from athletic injuries; similar to the way athletes use motivation every day to improve performance and better themselves. Overall, this study allowed for an insightful look into the complex mind of an athlete during a difficult and distressing time in their athletic careers.

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Appendix A

Demographic Form

Email: **Phone:**

Participation Number:
Name:
Race/Ethnicity:
Gender:

Age:
Athletic Year:
Recognized Sport:
Position:

Body Part:
Injured Side:
Injury (Type):
How long are you restricted from participation:
When did this injury occur?

Describe what happened to sustain your injury.

Appendix B

IRB Application Form

Adams State University
Request to obtain approval for the use of human participants

Date: November 7, 2016

To: Dr. Beth Bonnstetter, ASU Institutional Review Board

From: Miranda McWilliams

Subject: Psychology of Injury

(a) **Responsible Faculty Member:** Dr. Tracey Robinson, Office Phone: (719) 587-7663, Email: tlrobins@adams.edu

(b) **Others in Contact with Human Participants:** The following people are all certified athletic trainers recognized by the Board of Certification for Athletic Trainers and work directly with the student athletes: Josh Dreher (Head Athletic Trainer), Shanae Mundee (Assistant Athletic Trainer), Edward Jacobs (Graduate Assistant Athletic Trainer), Matthew Flattery (Graduate Assistant Athletic Trainer), Emily Wallace (Graduate Assistant Athletic Trainer), and Margaret Wetzel (Graduate Assistant Athletic Trainer); Katelyn Smith will be the second researcher conducting interviews.

(c) **The title of the research:** Exploring Psycho-Emotional Response to Athletic Injury and Rehabilitation of NCAA Division II Collegiate Athletes

(d) **Objectives of the research:** The purpose of the study is to explore the psycho-emotional response to athletic injury and rehabilitation in NCAA Division II collegiate athletes by exploring their experiences in real time: at time of injury through rehabilitation and return to sport.

(e) **Methods of procedure:** The study will involve injured athletes from multiple sports participating in two semi-structured interviews (Madrigal & Gill, 2014; Quinn & Fallon, 1999). The first interview will be conducted within twelve hours of the injury. The first interview will also include a demographics form, which will be completed by the participants. During their time of injury, the athletes will complete a rehabilitation protocol set up by the research assistants (certified athletic trainers in charge of their specific sport assignments). During this time, they will complete a daily journal via Google Docs cataloging their experiences during the injury. Once the athlete will able to return to their sport they will complete an exit interview as well as three additional days of daily journaling. Once they have completed these steps the data will be analyzed and cataloged.

(f) **Protection Measures:** In order to protect the privacy of the participants, the researcher will assign each participant an identification number, which will be used throughout the study. The researcher will have password protected electronic files for each participant's information and data as well as a locked drawer for hard copies of information forms. The researcher will also

ensure interviews are conducted behind closed doors with limited distractions and shaded windows. The head athletic trainer and the head coaches will also be asked to sign an agreement letter stating they are aware of the study and agree to the conditions of the study.

(g) Consent: See attached consent form.

(h) Changes: If any changes arise the primary researcher will contact the IRB immediately to inform them of the changes and will fill out the needed paperwork for the changes.

Name and Signature of Department Chair or Appropriate Person — Date: 1/18/17

Name and Signature of IRB chair — Date: 1-23-17

INSTITUTIONAL REVIEW BOARD
Approved on: 1-23-17
1-23-18

RESEARCH PARTICIPANT CONSENT FORM

Exploring Psycho-Emotional Response to Athletic Injury and Rehabilitation of NCAA Division II Collegiate Athletes

Miranda McWilliams

Adams State University

Department of Human Performance and Physical Education

Purpose of Research

The purpose of the study is to explore the psycho-emotional response to athletic injury and rehabilitation in NCAA Division II collegiate athletes by exploring their experiences in real time: at time of injury through rehabilitation and return to sport.

Summary of Specific Procedures to be Used

This research utilizes qualitative measures. If you are asked to participate in this study it is because you are a member of a recognized sport at Adams State University for the 2016-2017 academic year who sustained an injury during your participation with said sport. If there is an agreement to participate in this study you will fill out a demographic form and then be asked to continue participation through two semi-structured interviews, initial and exit respectively. The interviews will take place in the doctor's office of the Plachy Hall athletic training room. The initial interview will take place within 12 hours after the injury and the exit interview will be take place within three days of clearance from injury. During your injured time and between interviews you will also be asked to keep a journal of your experiences through Google Docs. You will also be asked to continue journaling for three days after clearance.

If your injury is sustained at an away competition. The research assistant traveling with your sport will take the place of the primary researcher. If there is an agreement to participate in this study, the research assistant will provide this form to you and provide the primary researcher with your contact information in order for the initial interview to take place via phone call. The demographic form will be completed via Google Docs.

Duration of Participation

Your participation in this study will include two 30 minute interviews at time of injury and at time of clearance. You will also be asked for 20 minutes a day of journaling from the day after your initial interview until three days following your clearance for return to participation. The research assistant may also ask to participate in a rehabilitation protocol for your injury. I will expect to have all of the interviews completed and journals collected by March 1st, 2017. You may stop participation in this study at any time.

Benefits to the Individual

If you agree to participate in this study, one potential benefit is coping with your injury through the journaling/reflecting process. However, there is no guarantee there will be any benefits to

you as the participant. However, your participation will contribute to future research in the topic of Psycho-Emotional Response to Sport Injury.

Risks to the Individual

There are some risks and discomforts associated with participation in this research. I am asking questions about your emotions and psychological response to your injury. The primary interviewer is one of the athletic trainers, while the secondary researcher is a coach. Most participates see and interact with these individuals every day and most will be comfortable with them. However, there are some who will not know us and do not need to participate if they feel uncomfortable. During the interview, you might be exposed to emotions that you were not aware of and may have difficulty dealing with. If you feel uncomfortable with a question, you do not have to answer it. And if you start to feel uncomfortable or begin to experience unwanted thoughts or emotions the researcher can refer you to counseling services and you can withdraw from the study.

Confidentiality

All information received in this study is confidential and will only be disclosed with your written permission as required by law. Participant information will be kept in a locked desk or in a password protected electronic file and only the primary researcher will have access to interviews, demographics form, and journals. No names will be associated with any of the transcripts. Once the study is done all information will be destroyed after one year.

Contact Information Statement

Primary Researcher	IRB Chair	Committee Chair
Name: Miranda McWilliams	*Name*: Beth Bonnstetter	*Name*: Tracey Robinson
Email: mcwilliamsmn@grizzlies.adams.edumailto:mcwilliamsmn@grizzlies.adams.edu *Phone*: 505.620.2992	*Email*: bbonnstetter@adams.edumailto:bbonnstetter@adams.edu *Phone*: 719.587.7494	*Email*: tlrobins@adams.edumailto:tlrobins@adams.edu *Phone*: 719.587.7663

Voluntary Nature of Participation

I understand that I can withdraw my participation at any time and will not suffer a penalty of doing so.

Human Subject Statement

If you have any questions regarding your rights as a participant in this research and/or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact Adams State University Institutional Review Board (which is a group of

people who review the research studies to protect participants' rights) at Beth Bonnstetter, (719) 587-7494, bonnstetter@adams.edu.

You may ask more questions about the study at any time. For questions about the study contact Miranda McWilliams at (505) 620-2992, mcwilliamsnm@grizzlies.adams.edu.

A copy of this consent form will be given to you to keep.

I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT.

Participant's Signature	Date
Participant's Name	
Researcher's Signature	Date

1-23-17
1-23-18

Appendix C

LETTER OF INFORMED PARTICIPATION

I, (name) _____, as the

(title)_____at Adams State University,

acknowledge the study being conducted by Miranda McWilliams involving the student athletes at this university for partial fulfillment of the requirements for her degree. I agree that participation in this study will not impact the dynamic of the school, athletic department, or any and all parties involved.

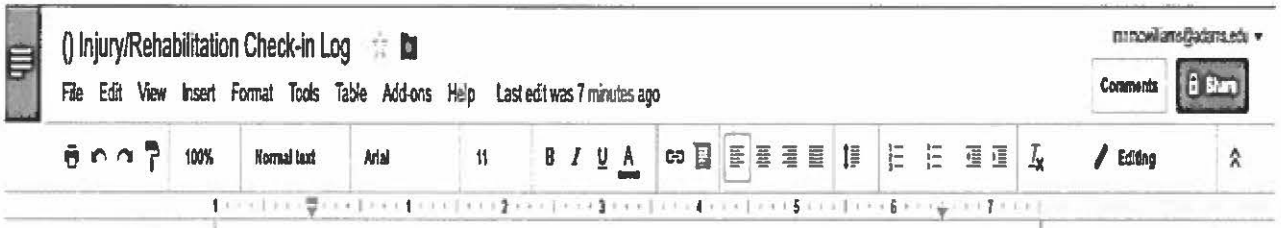
_____ _____

Signature Date

Appendix D

GOOGLE DOC JOURNAL EXAMPLES

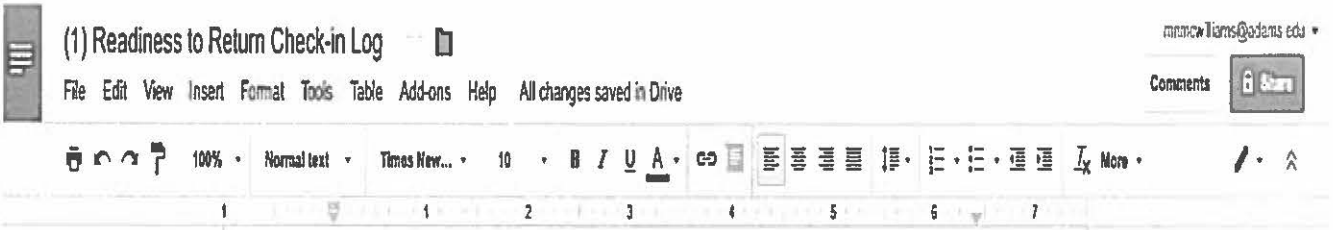
Injury and Rehabilitation Check-in Log and Journal



Injury/Rehabilitation Check-in Log	
Date:	
Have you completed your rehabilitation today?	
Answer and rate the following questions.	Rating: 1= extremely negative; 2= negative; 3= average; 4= positive; 5= extremely positive
Attitude towards your injury and rehabilitation (1-5)	
Communication with my athletic trainer (1-5)	
Communication with my coaches/teammates (1-5)	
Support from my athletic trainer (1-5)	
Support from my coach/teammates (1-5)	
Belief in my rehabilitation and return (1-5)	

Injury/Rehabilitation Journal Inquiry Questions: Daily Reference
1. What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your injury/rehabilitation today?

Readiness for Return Check-in Log and Journal



Readiness to Return Check-in Log	
Date:	
Have you completed rehabilitation today?	
Did you participate today?	
Answer and rate the following questions.	Rating: 1= extremely negative; 2= negative; 3= average; 4= positive; 5= extremely positive
Attitude towards your return and readiness (1-5)	
Communication with my athletic trainer (1-5)	
Communication with my coaches/teammates (1-5)	
Support from my athletic trainer (1-5)	
Support from my coach/teammates (1-5)	
Belief in my return and abilities (1-5)	

Readiness to Return Journal Inquiry Question: Daily Reference
1. What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your return/participation today?

Appendix E

RAW THEMES, GENERAL THEMES, AND EMERGENT THEMES

Initial Interview	
Question 1: Can you describe your thoughts, emotions, and motivations regarding your current injury?	
Raw Themes	Frequency
Difficulty adjusting to injury	2
Positive emotional outlook on injury	2
Negative emotional outlook on injury	11
Motivated to recover from injury	9
Adjustment to injury due to previous injury	4
Athlete finds education of injury beneficial	1
Feels sense of unknown for future	2
Willing to adhere to rehabilitation for recovery	3
Athlete is willing to compete with injury	1
Athlete questions team perception of self	1
Athlete questions why they suffered an injury	1

Question 2: What experiences (social, personal, and physical) do you anticipate having with this injury?	
Raw Themes	Frequency
Difficulty adjust to injury	5
Injury would not produce social or personal implications	9
Lack of participation produces negative feelings	3
Athlete wants to remain helpful to team	2
Negative emotional outlook on injury	3
Athlete predicts a difficult recovery	4
Positive social support	3
Athlete questions team perception of self	3
Athlete is willing to adhere to rehab	2
Athlete seeks isolation as coping method	1

Question 3: How do you foresee this injury impacting your participation?	
Raw Themes	Frequency
Miss all or some of season	2
Cautious return to participation	6
No impact from injury	2
Negative emotional outlook for rehab/return	1
Unsure about future implications from injury	2
Positive emotional outlook for injury/rehab	3
Motivated to return	1

Unsure about team perception	2
Willing to help team	1

Question 4: How do you foresee your rehabilitation experience going?

Raw Themes	Frequency
Positive emotional outlook for rehab	7
Uncertainties with rehabilitation	2
Athlete is willing to adhere to rehab	3
Athlete feels confident in ATC abilities	3
Athlete anticipates difficult rehab	2

General Themes from Initial Interview

Emotional disturbances due to injury
Injury impacts social relationships
Methods of coping with injury
Motivated to return despite injury
Athlete predicts rehab/return outcomes

Injury/Rehabilitation Journal

Question 1: What are your thoughts, emotions, and motivations, and experiences (social, mental, physical, and personal) in regards to your injury/rehabilitation today?

Raw Themes	Frequency
Positive social support from peers, family, and ATC	7
Injury caused negative emotional impact	9
Negative team perception	6
Positive emotional impacts toward injury/rehab	12
Rehabilitation was beneficial for the athletes' attitude	6
Positive attitude toward return	9
Negative social support from peers, family, and ATC	4
Difficulty adjusting to injury	8
Hesitation with return	6
Negative attitude toward injury/rehab	5

General Themes from Injury/Rehabilitation Journal

Injury caused emotional disturbance during rehabilitation
Injury/rehabilitation disrupted social support system
Injury impacted views of return
Coping to injury and rehabilitation

Exit Interview (**data from only 9 participants)

Question 1: Can you describe your thoughts, emotions, and motivations regarding your current injury?

Raw Themes	Frequency
Difficulty adjusting to injury	1
Positive outlook for return	5
Negative outlook on injury or rehab	7
Positive outlook on injury or rehab	2
Motivated to return to sport	3
Negative outlook for return	1

Question 2: What influenced or affected your experience with your injury/rehabilitation?

Raw Themes	Frequency
Positive social support	4
Athlete felt ready for return	3
Negative outlook on injury or rehab	4
Experienced no social or personal implications	1
Positive outlook on injury or rehab	3
Negative social support	1

Question 3: How did this experience of being injured and going through the rehabilitation for your injury impact your return to play?

Raw Themes	Frequency
Negative teammate and coaches support	1
Positive ATC support	2
Maintain connection to social support	2
Positive response to injury and rehab	4
Does not feel ready to return	2
Positive outlook on return to sport	3

Question 4: Inquiries from injury/rehabilitation check-in log that seems outstanding.

Raw Themes	Frequency
Felt disconnected from team	3
Negative support from teammates and coaches	3
Positive support from teammates and coaches	3
Continued to be part of team	1
Positive support from ATC	4
Difficulty adjusting to injury	2
Felt rehabilitation was beneficial	3
Hesitant for return	3
Positive attitude about injury/rehab	2
Negative outlook on injury and rehab	3

Confident and positive in return	3

General Themes from Exit Interview

Injury produced different coping methods
Emotional disruptions due to injury or rehab
Emotional disruptions to return
Injury impacted social relationships
Motivated for return

Return Journal (**data from only 9 participants)

Question 1: What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your return/participation today?

Raw Themes	Frequency
Difficult return to sport	7
Positive attitude towards return	8
Positive social support from peers, coaches, and ATC	3
Positive attitude about rehab	2
Negative emotional impact from injury	5
Negative emotional impact for return	1

General Themes from Return Journal

Reaction to return
Emotional disruption from return
Emotional disruption due to injury
Positive response from social support upon return

Emergent Themes From Data

Emotional reactions to injury
Injury produces social implications
Motivation as a driving factor for recovery
Rehabilitation experience impacts view of injury and return

Appendix F

RAW DATA FROM ALL PARTICIPANTS

Initial Interview
Question 1: Can you describe your thoughts, emotions, and motivations regarding your current?
Raw Data
new experience
positive outlook for recovery
disappointment injury occurred
hoping for quick recovery
fear of injury severity
positive outlook for time of season
motivated to return
positive outlook for recovery
confident in return
intrinsically motivated
views injury as inconvenient
fear of unknown
fear of severity
fear of loss of playing status
negative emotional implications from being injured
loss of sport/possible no return to sport
negative attitude toward injury
negative emotional impact from being injured
self-exclusion from team
motivated to recover
willing to adhere to rehab
negative reaction
wanting a quick return
angry
motivated to return
self-disappointment
motivated to return to sport
acknowledged limitations
willing to adhere to rehab
negative emotional impact
anxious about injury
self-reliance for motivation
self-talk for motivation
positive social support from peers, coaches, team

fear of severity
self-disappointment for getting injured
fear of the unknown
fear of severity
emotional cover up to seem tough
self-disappointment for getting injured
worried about how team will see them
acknowledged limitations
feelings of false hope for return/recovery
fear of losing current participation status
motivated to return to sport
willing to adhere to rehab
knowledge of expectations for return
negative emotional reaction to injury
negative outlook for recovery
anger towards self
disappointed in self for being injured
motivated to return to sport
previous history with injury
fear of severity
negative emotional implications from injury
fear of not completing the season
angry with self for getting injured
self-disappointment for getting injured
guilt for getting injured
motivated to return to sport
motivated to return to normal daily living
fear of letting the team/coaches down

Question 2: What experiences (social, personal, and physical) do you anticipate having with this injury?

Raw Data

physical handicaps due to injury
restrictions to normal daily living
anticipates no social problems to occur
worried about the team impact
feelings of guilt being absent from the team
willing to help team from sidelines
negative emotional impact from being injured
physical handicaps due to injury
some physical handicaps
no social impacts foreseen
inclusion with team
frustrated with injury

disappointed in self
positive outlook for recovery
physical handicaps due to injury
restrictions of normal daily living
negative teammate support
negative emotional implications from being injured
motivated to recover
physical handicaps due to injury
fear of severity
previous history of being injured
no social implications anticipated
long return expected
no social implications
willing to adhere to rehab
positive outlook for recovery
no social implications
no personal implications
negative emotional impact from injury
self-isolation from team and social support
seeks social support when needed
increase in stress level from injury
physical handicaps due to injury
restricted normal daily living
fear of severity
fear of re-injury
fear of exclusion from team
fear of playing status
anxiousness cause by injury
fear of abilities due to injury
fear of readiness for return
no social implications anticipated
worried about the team's view of the individual
afraid to disappoint team
guilt for being injured and missing reps
positive coaching support
positive teammate support
distrust of abilities for sport
restricted normal daily living
willing to adhere to rehab
no social implications anticipated
physical handicaps due to injury
willing to adhere to rehab
psychological implications due to injury
emotional implications with for initial injury

acknowledged limitations
positive reinforcement from self and support system
positive attitude toward injury/recovery
social life impacted by injury
positive social support from peers, team, family, ATC

Question 3: How do you foresee this injury impacting your participation?

Raw Data
no immediate return anticipated
no immediate return anticipated
acknowledged limitations for return
no fear of change in participation status
future health concerns
possible future participation
fear of re-injury
possible change in participation
unsure about participation status
fear of re-injury
fear of severity
uncertain of future status
feelings of guilt
acknowledged limitations
exclusion from team/sport
fear of re-injury
positive outlook to return
no change in participation
confident in return
fear of re-injury
cautious of abilities upon return
fear of loss of development
fear of loss of playing status
anxious for losing playing status
concerned about being left behind by team
supportive of team
positive attitude toward participation
self-inclusion to team activities

Question 4: How do you foresee your rehabilitation experience going?

Raw Data
positive support from ATC
anticipates positive rehab experience
positive outlook for recovery
positive outlook for time of season
confident in rehab

frustrated with rehab
willing to adhere to rehab
difficult rehab anticipated
willing to adhere to rehab
negative attitude toward recovery/injury
negative attitude about rehab
positive outlook on injury
positive outlook on return
unsure of rehab process
fear of severity
fear of the unknown
confident in rehab
willing to adhere to rehab
positive outlook for rehab
willing to adhere to rehab
confident in rehab
positive ATC support
motivated to return to sport
confident in rehab
confident in ATC
positive outlook for rehab
aware of limitations
fear of loss of playing status
confident in rehab
confident in ATC

Injury/Rehabilitation Journal

Question 1: What are your thoughts, emotions, and motivations, and experiences (social, mental, physical, and personal) in regards to your injury/rehabilitation today?

Raw Data

positive teammate support
positive ATC support
Adherent to rehab
physical handicaps due to injury
positive attitude towards circumstances
positive physical experience
positive social support from peers
negative ATC support
negative attitude toward injury
feeling excluded from team/sport
emotional relief from severity
emotional worry from severity

feelings of separation from team
feelings of alienation from team
intrinsic motivation to adhere to rehab on own
feelings of boredom with rehab
negative outlook for injury healing process
recognized improvements with rehab
prefers supervised rehab sessions
concerns about participation status
positive teammate support
confident in return
negative emotional impact from not participating
negative attitude toward injury
exclusion from team
highly motivated to return
positive attitude toward rehab
recognized improvements
positive emotional impact from rehab
confident in rehab
intrinsic motivation to do rehab on own
return to normal daily living
positive outlook for return/recovery
eager to return to sport
anger towards team performance
feelings of helplessness from the sidelines
confident in return
positive attitude toward injury
restriction of normal daily living
anxious of injury
negative ATC support
negative emotional implications from injury
acknowledged limitations
positive outlook for recovery
negative teammate support
feelings of guilt for being injured
positive ATC support
mood changes with physical setbacks
negative attitude toward injury
self-disappointment for being injured
alienation from team
supportive of team
feelings of hopelessness
feeling helpless
negative feelings toward team
physical handicaps due to injury

negative outlook towards injury
feelings of isolation from team
positive outlook for recovery
anxious about surgery
negative social support from team, peers, ATC
inclusion with team
fear of unknown
physical setbacks with injury
fear/anxious of unknown injury
fear of severity
anxious due to injury
motivated to return to sport
motivated to recover
feeling at ease from diagnosis
confident in rehab
fear of return
adherent to rehab
positive outlook for rehab
adherence to rehab
intrinsically motivated to do rehab on own
physical handicaps due to injury
motivated to return
confident in rehab
positive outlook for recovery
adherence to rehab
confident in return
fear of re-injury
positive outlook for recovery
motivated to return
negative outlook on rehab
negative emotional implications from injury
fear of isolation from team
positive social support from teammate/coaches
positive rehab experience
motivated to return
restricted normal daily living
positive coaching support
negative rehab experience
negative emotional impact from injury
understanding limitations
physical setbacks with injury
fear of re-injury
lack of confidence in rehab
positive outlook for return

positive rehab experience
decreased motivation for normal daily living
positive outlook for recovery
fear of re-injury
no social implications occur
lack of motivations for normal daily living
intrinsically motivated to do rehab on own
poor communication with ATC
positive ATC support
negative emotional implications with slow recovery
negative rehab experience
physical setback with rehab
negative emotional implications with interactions with coaches
positive ATC support
loss of playing status due to injury
team-exclusion
negative coaching support
positive outlook for recovery
positive rehab experience
motivated to return
lack of confidence in rehab
negative attitude toward injury/recovery
anxious of playing status
noticeable improvement with rehab
positive attitude for recovery
anxious of return to sport
confident in rehab
negative emotional impact from injury
positive outlook for recovery
positive attitude toward injury
anxious about loss of time
positive ATC support
positive rehab experience
physical set back with injury/rehab
intrinsically motivated to do rehab on own
team-exclusion
confident in return

Exit Interview (**data from only 9 participants)

Question 1: Can you describe your thoughts, emotions, and motivations regarding your current injury?

Raw Data

new outlook on injuries

positive ATC support
positive rehab experience
negative reflection on time away from sport due to injury
feelings of separation from team
feelings of alienation from team and ATC due to travel
negative attitude toward injury
high motivation to return to sport
yearning to play
positive rehab experience
motivated (external) to return
positive attitude
positive outlook
positive emotional implications
eager to return
positive attitude
no emotional impact
negative emotional implications
feeling at ease
negative attitude
motivated to help team
confident in return
positive outlook
motivated to return
negative attitude
frustration toward injury
lack of participation causes emotional disturbances
motivation to return
fear of re-injury
motivated to overcome fear
negative feelings toward injury
negative emotional implications
obsessive about injury
motivated to return
motivated to play
positive attitude
negative attitude toward injury
positive rehab experience
positive outlook
acknowledged limitations
positive attitude
motivated to compete

Question 2: What influenced or affected your experience with your injury/rehabilitation?

Raw Data
positive ATC support
did not feel rushed to return too soon
eager to return to return to sport
positive coach support
positive teammate support
internally motivated to return
fear of re-injury
no abnormal influences
negative outlook
motivated to recover
no abnormal experiences
concern about limitation
restrictions of NDL
adherence to rehab
positive rehab experience
positive teammate support
positive coaching support
self-acceptance
guilt
self-inclusion
no abnormal experiences
self-isolation
negative social support
negative teammate support
previous history
motivated to recover
positive attitude
negative emotional implications for loss of time
self-disappointment
feeling of exclusion
positive ATC support

Question 3: How did this experience of being injured and going through the rehabilitation for your injury impact your return to play?

Raw Data
positive attitude toward injury and rehab
negative coaching support
positive ATC support
negative view of return
anticipates difficult return
positive rehab experience
motivated to return w/o limitations
no fear of re-injury

foresees no change in playing status
negative view of rehab
willing to adhere
positive coaching support
behind in development
limitations
motivated to return
motivated to return
fear of re-injury
fear of status change
prove themselves
confident in return
positive ATC support
benefits from education/goals
positive social support
positive attitude

Question 4: Inquiries from injury/rehabilitation check-in log that seems outstanding.

Raw Data
feelings of separation from team
positive teammate support
negative coaching support
present in team activities
team inclusion
positive ATC support
fear of re-injury
fear of severity
physical handicaps due to injury
feelings of accomplishment with rehab
excited to return to play
motivated to return to sport
lack of confidence in self and abilities
Feelings of regret, guilt
self-deprecation
negative attitude of injury
disappointment in self
negative outlook
lack of confidence in rehab at beginning
self-alienation
avoidance of social support
self-exclusion from team
intrinsic motivation
negative coaching support
negative teammate support

slow return was helpful
motivated to return
self-alienation
fear of unknown
negative attitude toward injury
self-inclusion with team
negative coach support
negative teammate support
improvement in attitude with rehab
negative ATC communication
adherence to rehab
isolation
fear of re-injury
negative coaching support
negative teammate support
positive rehab experience
positive ATC support
feelings of isolation
adherence issues
positive ATC support
positive outlook
negative attitude
fear of re-injury
motivated to return
competitive nature
identity crisis
self-disappointment
negative coaching support
team-exclusion
negative teammate support
feelings of isolation
not caring
negative social support
positive outlook
positive ATC support
intrinsically motivated
negative attitude toward injury
Guilt2
disappointment
improved attitude
positive social support
outside social support
positive attitude
fear of severity

education
positive teammate support
positive coaching support

Readiness to Return Journal (**data from only 9 participants)

Question 1: What are your thoughts, emotions, motivations, and experiences (social, mental, physical, and personal) in regards to your return/participation today?

Raw Data

difficult transition to sport
positive attitude towards return
positive ATC support
over confident in capabilities
depression due to lack of readiness and limitations
ability to trust the process
(over)eager to return
adherent to protocol
negative emotional implications
confident in overcoming limitations
fear of re-injury
confident in process
positive emotional impact
understanding limitations
no difficulties in return
complications with injury
emotional implications
increased motivation
feels ready for return
foresees no limitations
positive outlook on return
fear of re-injury
support from team
complication with return
overconfident in abilities
willing to continue rehab
willing to return with fear of re-injury
confident in return
physical setback
participated with no restrictions
negative physical experience
not ready to return
overcoming setback
fear of re-injury
unsure of ability

negative rehab experience
positive outlook
confident in abilities
motivated to compete
confident in return
beneficial to team
positive outlook
confident in return
positive attitude
fear of re-injury
improved playing status
confident in return
positive attitude
positive outlook
acknowledged limitations
positive rehab experience