HOW THE PSYCHOSOCIAL EFFECTS OF SERIOUS INJURIES ARE RELATED TO THE ACADEMIC LIVES OF STUDENT-ATHLETES

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by
Bernadette M. Maher
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Examining Committee Members:

Frank Farley, Advisory Chair, Educational Psychology
Joseph P. DuCette, Educational Psychology
Wanda Brooks, Teaching and Learning
Steven Jay Gross, Policy, Organizational, & Leadership Studies

ABSTRACT

Competing within the National Collegiate Athletic Association (NCAA) involves an inherent risk of injury. For the student-athletes who experience serious injuries, the subsequent difficulties can be hard to navigate. While most research focuses on the athletic identity of recovering student-athletes, little is known about how they are affected within the classroom. This study utilizes qualitative methodology and Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998) to explore this gap in the literature, by looking at how the psychosocial effects of injury are related to student-athletes' academic responsibilities, as well as the balance between their athletic and academic commitments.

DEDICATION

To my parents Veronica and Bill

Who have supported all of my dreams

And always push me to do my best

To my little sisters Madeline and Natalie

Who I look up to

And to all my friends and former teammates who have dealt with serious injuries

This is for you.

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The first person I have to thank is my dissertation advisory committee chair, advisor, and mentor, Dr. Frank Farley. As a Master's student a few years ago, I was unsure what I wanted to do with my degree once I graduated. It was during this time that I was lucky enough to have Frank as a professor for the first time. His classes were some of the best and most interesting I had ever had, and I was incredibly inspired by his passion for psychology, and belief in the world as a positive place capable of change.

This experience reignited my personal interest in the field, and was a contributing factor in my decision to continue for my PhD. From the day he became my advisor, he supported me and believed in my ideas. As the only person in an educational psychology program that wanted to study anything sports-related, I had many days where I doubted whether or not my research topic was good enough. Frank never questioned it, and encouraged me to study something I cared about. He had many examples from his own research in studying Type T risk taking personalities that included athletes that I loved to hear about and compare to my own ideas.

Over the last few years, I have loved going to his office to ask a trivial question about a due date, page limit, etc., and leaving with a new world view after this turned into a discussion about technological and creative revolutions, the state of violence in the world, or simply became a re-telling of one of his many research adventures. I was also presented with unique opportunities as his advisee, such as being a part of his research group, "The Brain Trust," in which we published book and movie reviews. It was truly an honor to get to work with Frank, and I am so grateful for his guidance and leadership. I am proud to call him my mentor and friend.

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CHAPTER 1

INTRODUCTION

1.1 Background

The National Collegiate Athletic Association (NCAA) is a non-profit organization that regulates college athletics, and consists of "nearly half a million" athletes that span across 19,500 teams, in 24 sports, across 3 divisions ("What is the NCAA?" 2017). The term "student-athlete" includes any of these athletes, no matter what sport or at what level they are competing. The 24 sports overseen by the NCAA include: baseball (men), basketball, beach volleyball (women), bowling (women), cross country, fencing, field hockey (women), football (men), golf, gymnastics, ice hockey, lacrosse, rifle, rowing (women), skiing, soccer, softball (women), swimming and diving, tennis, track and field, volleyball, water polo, and wrestling (men) ("NCAA," 2017).

The three different NCAA divisions each come with their own expectations of student-athletes. Division I schools, "on average, enroll the most students, manage the largest athletic budgets, offer a wide array of academic programs and provide the most athletic scholarships" ("Want to Play College Sports?" 2017). Because Division I athletes are expected to devote the most time to their athletic commitments, the NCAA states that time management is "especially important" for these athletes ("Time Management," 2017). For example, Division I athletes are estimated to spend 38.5 hours per week on athletics, compared to 34 hours on academics, 17.1 hours socializing, and 78.4 hours of everything else (sleep, other extracurriculars, etc.) ("Time Management," 2017). This isn't just when their sport is in season, either. Activities including practice, strength and conditioning, supplemental workouts, as well as film review and team activities occur

year-round, and in an NCAA study, "two thirds of Division I student-athletes said they spend as much or more time on athletics during the offseason as during their competitive season" ("Time Management," 2017).

Division II student-athletes also dedicate a lot of their time to athletics, although the required hours are less than they are for Division I athletes. Division II schools are also typically smaller, and "provide growth opportunities through academic achievement, high-level competition and a focus on community engagement" ("Want to Play College Sports?" 2017). Finally, Division III schools "provide an integrated environment focusing on academic success while offering a competitive athletics environment" ("Want to Play College Sports?" 2017). The athletic time commitments of Division III programs are much less than at Division I or II schools, and Division III schools also differ in that they do not offer any athletic scholarships.

Much of the research on college athletics doesn't differentiate between the three divisions, instead focusing on "student-athletes" as a whole. For that reason, the literature review for this dissertation will cover the three divisions. However, because Division I athletes have the highest expectations and time commitments of their sport, the data collected for this dissertation was limited to Division I student-athletes.

1.2 Statement of Purpose

In 2001, Sherry Watt and James Moore attempted to answer the question: *Who are student athletes?* In this article, they pointed out that student-athletes face many of the same challenges as their peers, such as social adjustment, career exploration, and intellectual growth, but that overall the uniqueness of the student-athlete population must be acknowledged. For example, additional responsibilities of student-athletes include

attending daily practices, traveling for away competitions and studying team plays. Student-athletes must constantly balance their time in order to meet their athletic and academic commitments: "For example, although any college student might want to get good grades so as to avoid the wrath of a parent or guardian, the student athlete also has obligations to the coach, the team, and the rules and regulations of the National Collegiate Athletic Association (NCAA)" (Watt & Moore, 2001, p. 7).

Student-athletes also differ from their peers in that they face the possibility of injury daily. There are over 460,000 student-athletes who compete in the National Collegiate Athletic Association (NCAA), which recognizes that competing in any sport at a high level brings with it an unavoidable risk of injury ("Sports Injuries," 2014; "Student-Athletes," 2016). When student-athletes suffer an injury, they face a range of psychosocial challenges and therefore experience cognitive, emotional, and behavioral responses as a result (Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998). Compared to their uninjured peers, injured athletes tend to have higher levels of depression, anxiety, and stress, as well as lower levels of self-esteem (Brock & Kleiber, 1994; Granito & Vincent, 2001; Johnston & Carroll, 1998; Quackenbush & Crossman, 1994). Serious injuries can also result in feelings of confusion, isolation, guilt, anger, and bitterness (Brock & Kleiber, 1994; Harris, 2003; Quackenbush & Crossman, 1994). For those that have the ability to return to sport, there are additional stressors including fear of reinjury and concern over returning to their pre-injury level of performance (Kvist, Ek, Sporrstedt, & Good, 2005; Podlog & Eklund, 2005).

Social factors have been shown to be a particularly important influence in pain and injury experiences (Good, Brodwin, Good, & Kleinman, 1992; Hilbert, 1984,

Kotarba, 1983; Nixon, 1992, 1993a, 1993b; Udry, 1997). Specifically, the use of social support systems can be part of what helps a student-athlete cope with the negative psychological effects of an injury (Gottleib, 1983; Pearson, 1986; Pilisuk & Froland, 1978). However the messages student-athletes receive from their support systems, many of which revolve around their athletic participation, aren't always beneficial to their physical health: "the messages athletes receive about playing with pain and injuries are colored by a culture emphasizing the value of physical risk taking and sacrifice (Nixon 1994, p. 341). Factors such as this, along with added pressures that sometimes come from the expectations of a student-athlete's teammates and coaches, can further complicate the injury recovery process (Nixon, 1994).

A number of previous studies have analyzed the injury recovery process using different theoretical frameworks. Clement et al. (2015) points out that traditionally, physical rehabilitation is divided into three phases that are used to guide treatment, which are: acute injury phase, repair phase, and remodeling phase. While helpful physically, this model does not take psychosocial responses into account. Kamphoff et al. (2013) suggests an alternative approach instead, and divides the stages of rehabilitation into reaction-to-injury, reaction-to-rehabilitation, and reaction-to-return-to-play. Grief models, such as Weiss and Troxel's (1986) holistic study of psychological rehabilitation after injury, as well as another by Evans and Hardy (1995) have also been applied. Another study on the topic by Wiese and Weiss (1987) took a different approach, using a stress process model that considered the sport injury as a stressor that results in a cognitive appraisal of the event.

Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998) is another theoretical framework for understanding the effects of injuries, and has been used widely in studies on the subject (e.g. Bianco, Malo, & Orlick, 1999; Clement, Arvinen-Barrow, & Fetty, 2015; Evans & Hardy, 1995; Granito & Vincent, 2001; Green & Weinberg, 2001; Kamphoff, Thomae, & Hamson-Utley, 2013; Milne, Hall, & Forwell, 2005; Podlog & Eklund, 2005; Tracey, 2003). This framework forms the basis of the present study, due to its emphasis on the individualized nature of injury experiences.

Where this study differs from others, and therefore aims to fill a gap, is in its combination of two areas of the current literature on student-athletes: their conflicting athletic and academic commitments, and the injury recovery process. While a lot of the research centers on student-athletes' athletic identity, little is known about how the injury recovery process affects this population in the classroom. For example, what is unknown is once an injury occurs, how the psychosocial challenges student-athletes endure affect their academic roles and responsibilities, as well as the preexisting balance that exists between their athletic and academic commitments. This study aims to explore this gap in the literature, by gaining a better understanding of this aspect of student-athletes' injury experiences.

1.3 Research Questions

With a theoretical basis in Wiese-Bjornstal et al.'s integrated model of response to the sport injury and rehabilitation process (1998), and through a qualitative research design, this study aims to explore the following research questions:

R1: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience as a result of a serious injury?

R2: How are these psychosocial responses related to a student-athlete's academic life (psychologically and behaviorally)?

R3: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities (psychologically and behaviorally)?

CHAPTER 2

REVIEW OF LITERATURE

2.1 Athletic and Academic Commitments of Student-Athletes

This study aims to understand the injury experience in student-athletes, not only in terms of athletic consequences, but also in relation to the academic portion of a student-athlete's life. For this reason, the following part of the literature review will discuss some of the ways student-athletes differ from their peers, specifically in the way that they must constantly balance their athletic and academic commitments.

The relationship between higher education and athletics has been turbulent since competitive intercollegiate sports were introduced in the United States in the 19th century (Watt & Moore, 2001; Zimbalist, 1999). In an article titled *Athletics in American Colleges*, first published in 1930, W. H. Cowley (1999) questioned the likelihood that a school could successfully balance these two priorities:

> How far can an agency, whose function is intellectual, go in the development of other causes without danger to its primary purpose? […] Can it [the university] concentrate its attention on securing teams that win, without impairing the sincerity and vigor of its intellectual purpose?" (p. 495)

This same question has come up many times since then, especially as college sports have become a form of "mass entertainment" (Watt & Moore, 2001, p. 8).

The NCAA term "student-athlete" is meant to suggest that those who participate in collegiate athletics are students first, and athletes second; however, in reality this is not always the case. In a New York Times editorial titled "The Myth of the Student-Athlete," Gary Gutting (2012) argues that a lot of student-athletes are primarily athletes, as opposed to students who participate in "secondary ('extra-curriculuar') activities that enhance their education," as the term "student-athlete" implies (para. 4). Without placing

blame entirely on the NCAA, however, he also points out the larger cultural issue at hand.

> The deeper harm, however, lies in the fact that, in the United States, there is a strong strain of anti-intellectualism that undervalues intellectual culture and overvalues athletics. As a result, intellectual culture receives far less support than it should, and is generally regarded as at best the idiosyncratic interest of an eccentric minority. Athletics, by contrast, is more than generously funded and embraced as an essential part of our national life. (Gutting, 2012, para. 11)

This national focus on athletics has been echoed many times over. As described by Kathryn Jay, "in modern American society, sports are far more than just a game" (2013, p. 4). In the US, sports are a huge part of everyday life for many Americans. Rooting for the local team is a popular family pastime, and sports are widely broadcast as part of local and national news stories, as well as on their own networks such as the Entertainment and Sports Programming Network (ESPN). Sports even saturate our daily language, with phrases such as "don't drop the ball," and "level [the] playing field," often applied to situations that have nothing to do with athletics (Jay, 2013, p. 2). Sports are such an essential part of American life that it has become "a multi-billion dollar industry that is a central lens through which we view the world, helping many Americans to create a sense of personal identity and community" (Jay, 2013, p. 2). Sports figures are also highly regarded in American culture: "We celebrate athletes as national heroes and regard sports as a place that teaches all the best qualities of citizenship, especially integrity, reliability, and a sense of responsibility" (Jay, 2013, p. 4).

In general, student-athletes' college experiences are likely to be very different than those who do not participate in varsity athletics: "Student athletes on most college campuses today represent a special population of students with unique challenges and different needs from their nonathlete peers" (Gayles 2009, p. 33). In addition to the

traditional academic responsibilities all college students have, student-athletes must balance these with the commitments of their athletic roles, which can be physically and emotionally strenuous. Some of ways student-athletes differ from their peers include the time commitments of their sport, the likelihood of experiencing injury and fatigue, and the fact that student-athletes are permitted to miss a number of classes when they are in season (Gayles 2009; Simons, Van Rheenen, & Covington, 1999; Watt & Moore, 2001; Wolverton, 2008). Even a small thing like scheduling can be vastly different for a student-athlete compared to a nonathlete peer. Nonathletes generally manage their own schedules and figure out for themselves how to balance academic and social priorities, by choosing which classes to take and when, when to study, work out, eat, etc. (Lanning, 1982; Watt & Moore, 2001). For student-athletes, however, activities are planned out for them due to an inflexible and demanding schedule (Jordan & Denson, 1990; Watt & Moore, 2001).

Conflicting messages can make balancing academic and athletic commitments even more difficult for student-athletes. A 2016 study by Jayakumar and Comeaux found the following:

> While academics are espoused as a priority at the university and within an athletic department that features an academic support system (e.g., tutors, computer center), and although the importance of balancing a dual student/athlete role is constantly reinforced verbally, underlying messages and structures push college athletes toward a greater focus on athletics at the expense of their academic futures. (p. 488)

For this reason, a lot of student-athletes find that it is difficult to balance their athletic, academic, and social lives (Harrison, Stone, Shapiro, Yee, Boyd, & Rullan, 2009; Jayakumar & Comeaux 2016; Yopyk & Prentice, 2005). Aside from balancing the responsibilities of being an athlete as well as a student, they must also figure out where

these commitments fit into their personal identities. Positive and negative reinforcements can lead to forming an identity as both a student and an athlete, or they "can encourage the student athlete to focus on one element of that identity to the detriment of the other" (Watt & Moore, 2001, p. 13). For a large number of student-athletes, especially those that play at the Division I level, their identity as an athlete takes precedence over their academic identity. This can lead them to neglect academic responsibilities, making it more difficult to be successful in the classroom (Hinkle, 1994; Martens & Lee, 1998; Parmer, 1994; Watt & Moore, 2001).

Part of the reason academic responsibilities take a back seat is because for athletic participation alone, Division I student-athletes devote an average of over forty hours a week, not including physical therapy for injuries, or potential time lost to mental or physical fatigue (Jayakumar & Comeaux 2016; Wolverton, 2008). Due to the conflicting commitments in their lives, a lot of athletes experience identity role conflict throughout college (Adler & Adler, 1991; Harrison et al., 2009; Jayakumar & Comeaux 2016; Settles, Sellers, & Damas, 2002). Identity role conflict is caused by cognitive dissonance, when there is a disconnect between college athletes' commitment to their academics and sport, and how much time is actually put towards these activities (Jayakumar & Comeaux, 2016). In order to deal with this conflict, student-athletes can either change their identified values to match behavior, or change their behavior in accordance to their values (Aronson, 1968; Bem, 1967; Jayakumar & Comeaux, 2016).

There are four different types of difficulties that can occur when there is a gap between student-athletes' ability and the environmental demands they have to live up to. As identified by Blinde and Greendorfer (1992), these are 1.Value Alienation:

"discrepancy between values of the sport program and personal values of the athlete," 2. Role Strain: "difficulties experienced when an athlete attempts to meet the varied expectations and demands that others place on being an athlete," 3. Role Conflict: "difficulties experienced when an athlete attempts to meet the varied expectation and demands of multiple roles," and 4. Exploitation: "expectations of athletic role dominate expectations of other roles, forcing the individual to reduce involvement in other roles to the point that these other roles cannot be adequately fulfilled" (para. 7). Although not all athletes will experience all four types of conflict, many are likely to experience at least one during their experience as a collegiate athlete due to the demands of being a student-athlete (Blinde & Greendorfer, 1992).

Snyder (1985) identifies four different levels of commitment based on how people value both their academic and athletic roles. The first, Type I, is the *scholar-athlete*, who has a high commitment to both academics and athletics. This person must have the intellectual and physical ability to balance these commitments, but will receive positive ego benefits from both roles, more so than they would from focusing on one aspect of their identity. The second, Type II, is the *pure scholar*, who focuses primarily on academic identity with little commitment to athletics. While these people value academic achievement, they will likely have less overall benefits than Type I, who receives gratitude from both roles. Type III, the *pure athlete*, is "willing to devote all their time and energy to accruing benefits from their athletic activity, while their student role is viewed as expendable" (Snyder, 1985, p. 215). This is the type of student-athlete who puts the main focus of their college experience on their athletic participation, taking easy classes when possible and doing the minimum amount of schoolwork they deem

acceptable. The final, Type IV, or *nonscholar-nonathlete,* lacks commitment in both academics and athletics, and therefore wouldn't likely be a student-athlete.

There have been several studies that have supported Snyder's role types, including a study by Spreitzer and Pugh (1973), which found a greater chance for collegiate athletes to become *pure athletes* if athletics had been highly valued in their high school. Additionally, Adler and Adler (1985) found that college basketball players entered college optimistic about their academic roles, but devalued academics and focused more on athletics as early as their second semester in college. Theories on multiple roles such as those experienced by student-athletes suggest that these roles are either in conflict with one another, or that they can enhance one another, such as a student-athlete who receives satisfaction from both like the *scholar-athlete* (Snyder, 1985).

No matter how a student-athlete self-identifies though, the combination of athletic and academics demands can be difficult to manage. At the Division I level, "where time constraints are most demanding," a lot of schools have academic support systems in place to help student-athletes excel both on and off the field (Gayles, 2009, p. 34). Critics of the NCAA, however, believe that student-athletes exist in a subculture different than their peers; one that allows for lower academic performances, in which student-athletes graduate at lower rates, cluster in the same majors, and socially separate themselves from their nonathlete peers (Bowen & Levin, 2003; Gayles, 2009; Shulman & Bowen, 2001). Some have even argued that student-athletes, particularly those in revenue sports such as football and basketball, should actually be considered professional athletes and be

paid as such, due to the time commitments and national popularity of their athletic participation (Gutting, 2012).

Aside from the required hours spent directly in athletic participation each week, there are also secondary effects of athletic participation that can interfere with academics: "Because athletic participation is physically strenuous, there exists the problem of fatigue that makes concentration during studying more difficult" (Simons et al., 1999, p. 158). Injuries also present a specific problem, because "in addition to the pain and physical discomfort that may interfere with full concentration while studying or attending class, extra time is required for rehabilitation of both minor and major injuries" (Simons et al., 1999, p. 158).

Simons et al. (1999) studied the motivational profiles of Division I student-athletes, and noted how the expectations of student-athletes can be contradictory. Student-athletes are most often recruited to be part of a team by their school, and are chosen in part because they are "highly motivated to succeed in the athletic domain, having been selected to participate in intercollegiate athletics because of their proven ability and desire to succeed" (p. 151). Student-athletes' athletic abilities have likely been praised throughout their lives by their coaches, parents, and peers, and thus ingrained in their priorities by the time they arrive at college. Athletics, however, are not the only commitment student-athletes have: "[A]lthough these individuals are expected to maintain their athletic motivation at the university, they are likewise expected to demonstrate a similar motivation to succeed in the classroom" (Simons et al. 1999, p. 151). While a school knows the athletic ability of recruited student-athletes, their

academic ability is more variable, and the institutional demands of college level athletics make balancing the two difficult.

There are certain qualities required for athletic success, however, that when transferred to the classroom can be equally as important. This includes traits such as hard work, discipline, perseverance, determination and focus (Simons et al., 1999). Studies have shown though that not all athletes are able or willing to prioritize these traits equally across both domains. Specifically, revenue athletes such as football and men's basketball are more likely to lack academic motivation (Simons et al., 1997; 1999), and therefore have reduced academic performance (Simons et al., 1999; Snyder, 1996; Snyder & Spreitzer, 1992). Female and nonrevenue athletes, on the other hand, are more likely to have academic motivation and therefore perform better, as shown by higher college GPA scores (Simons et al., 1997; 1999).

In any case, when there is a conflict that arises between athletics and academics, student-athletes are more likely to prioritize in favor of their athletic commitments (Adler & Adler, 1991; Simons et al., 1997; 1999). If a student-athlete has an unexpected academic commitment that comes up, his or her coach is prohibited by the NCAA from requiring that student-athlete to attend a conflicting practice that occurs at the same time. These coaches can, however, express their disapproval, and since coaches have the power to determine playing time and who starts on their team, some student-athletes believe they will be penalized if they choose academics over athletics. Missing practice for an academic commitment could also negatively affect student-athletes athletically as it may interfere with their skill development, or make them fall behind in learning team strategies or plays. In addition to the coaches, student-athletes also have to answer to

their team when they make such decisions: "As the team often represents the central peer group for the student athlete, peer pressure to favor athletic demands over academic ones plays a strong role" (Simons et al., 1999, p. 159).

Culturally, athletic departments can feel very separate from the overall population at college or university: "At the college level, athletic administrators and coaches tend to be isolated from the intellectual life of the campus" (Simons et al., 1999, p. 161). In addition, student-athletes may feel separate from the general population on campus due to the amount of time and energy they give to their teams and athletic peers. To help student-athletes balance their responsibilities, college staff and faculty should be more involved, both in the recruiting process and once they arrive, to make sure they know they are valued as both students and athletes, as opposed to just for their athletic ability. Coaches can also play a part, as the "major adult role model" for their athletes, by viewing their student-athletes' academic success as part of their responsibility (Simons et al., 1999, p. 161).

The NCAA has taken several measures to try to ensure the academic and athletic success of their student-athletes. They passed Proposition 48 (1986), Proposition 42 (1989), and Proposition 16 (1995), which regulate student-athletes' athletic eligibility and how they receive funding for doing so (Watt & Moore, 2001). In 1991, they also mandated that student-athletes make up no more than 49 percent of the students in a residence hall (Watt & Moore, 2001). Before this, student-athletes sometimes lived in their own buildings that were located closer to the fields or gyms that they needed to use, in order to make their schedules easier. Although this may have eased logistical concerns, student-athletes also reported feeling isolated from the general student

population (Leach & Conners, 1984; Watt & Moore, 2001). This 1991 decision allowed student-athletes to integrate more with their nonathlete peers.

Despite the NCAA mandate regarding housing, there is still likelihood for student-athletes to feel isolated on campus despite being physically closer to everyone else (Carodine, Almond, & Gratto, 2001). The demands of expectation to excel both on the field and in the classroom can leave student-athletes feeling disconnected: "Given that a significant number of student-athletes, particularly in the sports of football and basketball, report 'frequent' or 'occasional' feelings of isolation, athletic departments should intensify efforts to encourage student-athletes to build relationships outside the [athletic] department" (Gerdy, 1997, p. 61).

Student-athletes' experiences can also be determined based on which division they play in. Division I student-athletes "might have fewer opportunities to be a part of the traditional college experience because of the demands of athletic participation at that level, including the high benefits and costs (both immediate and long term) of win-loss records, and of media attention and scrutiny" (Watt & Moore, 2001, p. 12). Division II and Division III programs, on the other hand, pride themselves on integrating their student-athletes into the college environment, and are generally less intense than Division I schools: "The general understanding is that athletes who compete at the Division II and III colleges and universities do so for the love of the sport rather than for external rewards" (Watt & Moore, 2001, p. 12). The study herein was conducted at a Division I NCAA institution, where the athletes face the highest level of demands.

There are both positive and negative aspects of competing in athletics at a high level. Athletic participation has been linked to good health and well-being (Cowley,

1999; Watt & Moore, 2001; Zimbalist, 1999), as well as high self-esteem, leadership and teamwork skills, motivation, and discipline (Chu, 1989; Harris, 1993; Simons et al., 1999; Sonestrom & Morgan, 1989; Watt & Moore, 2001). Athletes also benefit in that athletic participation helps athletes develop a positive identity and strong character (Chu, 1989; Harris, 1993; Watt & Moore, 2001). Other positive characteristics that can result from athletic participation include character traits of responsibility, sociability, and self-acceptance (Chu, 1989; Watt & Moore, 2001). Alternatively, coaches and peers can value winning at all costs which can lead to aggressiveness, trash talking, steroid use, and negative or unhealthy body images (Burke, 1993; Fields & Pelaney, 1993; Presley, Meilman, Cashin, & Leichliter, 1997; Watt & Moore, 2001).

Societally, there are conflicting views from outside the sport regarding student-athletes. A negative stereotype often attributed to athletes is the dumb jock, who is "academically unqualified, unintelligent, and socially impotent" (Watt & Moore, 2001, p. 13). O'Bryant (1993) found that such negative portrayals, which appear in everyday conversations as well as popular culture, can be detrimental to how athletes view themselves. The paradox is that student-athletes can also be portrayed as heroes, who are given parades when they win championships, or even immortalized in bronze statues by their alma maters (Everson, 2010). Mixed messages like these can cause a student-athlete to either fulfill neither role completely, or to select one identity over the other, in what is described by Nelson (1983), as an act of "identity foreclosure," (as cited in Martens & Lee, 1998 p. 125). Athletes may also have adjustment issues when their status changes to nonathlete once their college athletic experience is over, due to graduation or the occurrence of a career-ending injury (Watt & Moore, 2001).

2.2 Psychosocial Effects of Athletic Injury

The negative psychological effects of injuries in athletes have been well documented in the literature (e.g., Evans & Hardy, 1992; Green & Weinberg, 2001; Hardy, 1992; Johnston & Carroll, 1998; McDonald & Hardy, 1990; Podlog & Eklund, 2005; Wiese-Bjornstal et al. 1998), and injured athletes have been shown to experience a range of psychosocial challenges as they recover. Although there are common themes to how athletes respond to the phases of recovery, being injured is likely to be an individual experience that is different for each person. This is because athletes' cognitive appraisals, or the way they interpret or assess the quality of factors postinjury, will affect how they cope with the recovery process (Wiese-Bjornstal, et al., 1998). As explained by Lazarus and Folkman (1984), "[a] cognitive appraisal reflects the unique and challenging relationship taking place between a person with certain distinctive characteristics (values, commitments, styles of perceiving and thinking) and an environment whose characteristics must be predicted and interpreted" (p. 24). This section will detail some of the negative psychological effects that athletes can experience as a result of an injury, through different stages of the recovery process.

One of the first reactions athletes are likely to experience after an injury is a sense of loss due to a sudden inability to participate in their sport (Evans & Hardy, 1992; Green & Weinberg, 2001; Hardy, 1992; McDonald & Hardy, 1990; Wiese-Bjornstal et al., 1998). McDonald and Hardy (1990) assessed five NCAA Division I athletes within 24 hours of suffering an injury, and found that the athletes experienced anger, confusion, exhaustion, and felt disturbed by what had happened to them. Additionally, Evans and Hardy (1995) observed the following emotional responses in injured athletes: "irrational

thoughts; emotions such as disbelief, fear, rage, and depression; and somatic complaints including insomnia, muscle tension, loss of appetite, and fatigue" (p. 237). Athletes postinjury may also experience frustration, anxiety, and a loss of self-esteem (Green & Weinberg, 2001; Johnston & Carroll, 1998).

Once athletes begin physical rehabilitation, they can continue to experience decreased self-esteem as well as frustration, anger, and fear of reinjury (Bianco, Malo, & Orlick, 1999; Clement, Arvinen-Barrow, & Fetty, 2015). Other fears athletes experience include "fear of loss of fitness, fear of loss of independence, fear of asking for assistance, and fear of losing a spot on the team" (Tracey, 2003, p. 289). Some athletes may also feel apathetic and fail to adhere to their prescribed exercises, which was interpreted by Clement et al. (2015) as due to either a lack of motivation, or an impatience and eagerness to return to play. Kamphoff, Thomae, and Hamson-Utley (2013) produced a three-stage approach to rehabilitation, and found that athletes were likely to experience anxiety and negative cognitive appraisals during the first, reaction-to-injury phase. During the second, reaction-to-rehabilitation phase, athletes faced motivational challenges, and during the final reaction-to-return-to-play stage, athletes had self-confidence issues and fears or anxiety about the possibility of being reinjured.

Clement et al. (2015) explored eight injured athlete's psychosocial responses to their sport injuries based on these three phases by Kamphoff et al. (2013) in a series of qualitative interviews. What they found was that athletes' cognitive appraisals of their injuries and subsequent emotional and behavioral responses varied, and were influenced by four specific events: initial reaction to injury, reactions to injury after diagnosis, reactions to rehabilitation, and reactions to return to sport. They also found that reactions

in the earlier phases influenced later reactions, and that certain personal and situational factors also played a part. In terms of personal factors, injury severity, recovery status, and perceived length of time to return to sport had an effect on reactions, and teammate, coach, family, and sport medicine professional influences were the most prominent situational factors.

More specifically, in the first phase, reaction-to-injury, athletes' initial cognitive appraisals of the situation were predominantly negative, and based on the perceived severity of the injury. If the athlete appraised the injury as serious, this resulted in highly negative emotional responses which participants described as being "hysterical," "angry," "in shock," and "really, really upset" (Clement et al., 2015, p. 98). The most common behavioral response was to seek support from family and significant others. Once athletes received a diagnosis on their injury, cognitive reappraisals occurred, as they were now fully aware of the injury severity.

During reaction-to-rehabilitation, athletes were concerned with thoughts questioning the rehabilitation process, and felt frustration most commonly as an emotional response. During rehabilitation, seeking social support continued, especially with sports medicine professionals, who became a crucial part of recovery. In this study, reactions-to-return-to-sport were mixed, as athletes felt nervousness and reinjury anxiety, as well as excitement to regain their participation. These appraisals resulted in cautiousness behaviorally. Additionally, the athletes felt that they had learned lessons as a result of their injury and recovery process, including appreciating their sport and their health, and working hard (Clement et al., 2015).

Upon returning to the field, student-athletes are likely to still experience psychological effects from their injury. Athletes who begin to play after a serious injury (defined by Podlog & Eklund as a minimum time-loss criterion of 2 months) have been shown to experience heightened competitive anxiety, focus unnecessarily on the injury area, and struggle to regain their level of preinjury technical skill and ability (Podlog & Eklund, 2005). It is possible that the stress that occurs with coming back from an injury comes from a fear of reinjury (Bianco et al, 1999; Gould et al., 1997; Podlog & Eklund, 2005). Fear of reinjury can cause athletes to be hesitant and hold back from giving 100% effort, and avoid injury-provoking situations, especially if they are similar to how they were injured initially (Johnston & Carroll, 1998). These mind games can lead to a risk in reinjury as well as hinder confidence and performance (Taylor & Taylor, 1997, Williams, 1993; as cited in Podlog & Eklund, 2005).

These are just some examples of the ways athletes can react psychologically to an injury. The overall mood disturbance of athletes postinjury relates to their cognitive appraisals of the situation (Daly, Brewer, Van Raalte, Petitpas, & Skylar 1995), an important part of which is an athlete's self-perception. Self-perception includes self-esteem, "an individual's assessment of her or his own worth," self-confidence, "a generalized belief in oneself," and self-efficacy, "a belief in oneself as competent and effective in specific situations" (Wiese-Bjornstal et al., 1998, pp. 50-51). There are mixed results regarding how these are affected following an injury. For example, Chan and Grossman (1988) found that injured runners had significantly lower self-esteem than noninjured runners, and McGowan, Pierce, Williams, and Eastman (1994) found that injured football players had significantly decreased self-worth compared to noninjured

players. Additionally, in a study of 343 male college athletes across 10 sports, those injured had lower self-esteem immediately following injury as well as two months afterwards (Leddy, Lambert, & Ogles, 1994).

On the other hand, several studies have also failed to find a difference in self-esteem between injured and noninjured athletes (e.g., Brewer & Petrie, 1995; Smith et al., 1993). In terms of self-confidence and self-efficacy, studies have shown that differing factors can affect these variables. Sordodoni, Hall and Forwell (2000) found that imagery use during rehabilitation helped athletes control stress levels and improve their self-confidence. A study by Milne, Hall, and Forwell (2005), however, found that with injured athletes, "although imagery can be an important source of self-efficacy, in rehabilitation this does not appear to be the case" (p. 165). So while some studies found that the use of positive imagery aided in injured athletes' self-confidence and self-efficacy during their rehabilitation, other studies were unable to replicate these findings.

Mixed study results such as these are due to the fact that there are many factors that affect how an athlete reacts to the occurrence of an injury (Green & Weinberg, 2001; Hanson, McCullaugh, & Tonymon, 1992; Petrie, 1993; Wiese-Bjornstal et al., 1998). Potential influences include starter vs. nonstarter status, hardiness, severity of the injury, and history of past injuries (Green & Weinberg, 2001). The issue is complex, in that "the presence of a particular variable does not insure that the individual will react in the hypothesized way" (Green & Weinberg, 2001, p. 56). For example in Green and Weinberg's 2001 study of recreational athletes, some participants with very low athletic identities had extremely high levels of mood disturbance after an injury. On the other hand, some participants with higher levels of athletic identity experienced lower levels of

mood disturbance (Green & Weinberg, 2001). The reason for such discrepancies between individuals ties back to individual cognitive appraisals of the experience.

Race and gender can also be factors in the reaction of student-athletes to their injuries. For example, sports socialization could lead men to be more concerned with masculinity, and ignoring pain or an injury could be a part of that (Nixon, 1994). In terms of race, "perceptions of racial prejudice or discrimination could make Black athletes more reluctant than White athletes to engage in any kind of support seeking that could be construed as weakness or weak commitment" (Nixon, 1994, p. 342).

How athletes self-identify is another potential component in their psychological response to injury. Athletic identity is defined by Brewer, Van Raalte, and Linder (1993) as "the degree to which an individual identifies with the athlete role" (p. 237). For example, those who are "intensely involved with athletics and receive encouragement for their participation may focus their self-identity on the role of an athlete" (Green & Weinberg, 2001, p. 44). For such athletes, an injury can result in a threat to this identity: "In essence, because his or her life focus is primarily sport-related, the occurrence of injury may disrupt that focus and lead to emotional and psychological reactions, which are typically negative" (Green & Weinberg, 2001, p. 44). Brewer (1993) examined the extent to which an athlete's identity was related to depressive symptoms due to either a real or imagined injury. In a series of four separate studies, he found that athletic identity was positively related to depression in injured athletes.

Identifying strongly with an athletic role can be dangerous for another reason. Murphy, Petitpas, and Brewer (1996) found that having a strong athletic identity can lead student-athletes to put off planning for their lives after college: "The findings suggest that

failure to explore alternative roles and identifying strongly and exclusively with the athlete role are associated with delayed career development in intercollegiate student athletes" (p. 239). Especially at risk were male student-athletes in revenue producing sports, potentially because they hope to pursue a career as a professional athlete once they graduate. While those with many priorities may be able to handle an athletic injury more readily, athletes whose main life goals relate to their athletic participation are especially at risk for the negative psychological effects of an injury. As stated by Green and Weinberg, (2001): "Competitive athletes [...] have much more to lose when they become injured" (p. 53).

While much is known about the potential negative effects of athletic injuries, little is known about how an athletic injury affects a student-athlete academically, with one exception: concussions are mild traumatic brain injuries, which can occur in almost any Division I sport. As the scientific community has learned more about the long-term effects of concussions in recent years, there has been a lot of emphasis on studying this particular injury. Dealing with the recovery of an athlete who has suffered a concussion is a unique challenge for athletic trainers, as the symptoms are not always obvious to an outside observer, and can affect student-athletes in their daily lives more so than another type of injury. Because of this, McGrath (2010) notes that athletic trainers must take into consideration aspects of recovery that they wouldn't with another type of injury:

> Although the AT's immediate concern is the student-athlete's safety and readiness to resume exercise and contact sport participation after a sport-related concussion, it is also very important to recognize that athletes recovering from concussions face certain predictable challenges in their academic lives in the days and weeks after these injuries. (p. 492)

This quote highlights that for injured student-athletes, a priority of their recovery is returning to the playing field, even when they have suffered a brain injury that may cause them to struggle in the classroom. McGrath suggests that special considerations be made in the classroom for a student-athlete with a concussion, including excused absences from class, extension of assignment deadlines, and excuse from specific tests and assignments. He cites reasons for these accommodations such as needing days of rest, having information-processing speeds and ability to handle a normal workload impeded, as well as relieving emotional pressure from the student-athlete to allow them to return to a normal workload as soon as possible (McGrath, 2010). Aside from the information-processing speeds that are affected specifically because of the nature of a concussion injury (McGrath, 2010), needing days of rest and relieving emotional pressure are accommodations that any student-athlete who has suffered a serious injury could benefit from as well.

2.2.1 Social Influences

Regardless of how an individual reacts to the occurrence of injury, there are different techniques athletes can use to deal with the negative effects: "coping strategies help an athlete defend against negative life experiences, which can lead to increased resiliency against injury, and better adherence to rehabilitation should an injury occur" (Green & Weinberg, 2001, p. 46). Social factors in particular have been shown to be an important influence in pain and injury experiences (Good, Brodwin, Good, & Kleinman, 1992; Hilbert, 1984, Kotarba, 1983; Nixon, 1992, 1993a, 1993b; Udry, 1997). As such, social support systems can be a part of what helps a student-athlete cope with a serious injury (Gottleib, 1983; Pearson, 1986; Pilisuk & Froland, 1978). As described by Green

and Weinberg (2001), "Socially supporting relationships act as a coping resource and help with an individual's emotional adjustment" (p. 46).

The resources provided by social support can include advice, information, as well as material services (Pearson, 1986). For athletes, social support can alleviate the emotional disruption that occurs after an injury, as social support has been shown to act as a buffer to negative life stress (Green & Weinberg, 2001; Hardy, Richman, & Rosenfeld, 1991; Petrie, 1993; Smith & Smoll, 1991; Smith, Smoll, & Ptacek, 1990). One way this occurs is that social support can limit the stress appraisal between the event (injury), and the stress reaction (Cohen & Wills, 1985). In a study of 30 athletes who had sustained injuries that kept them from participation for at least six weeks, Green and Weinberg (2001) found a significant relationship between an individual's perceived satisfaction with his or her social network and mood disturbance following an injury: "Specifically, individuals who were more satisfied with their social network had less total mood disturbance following an injury" (Green & Weinberg, 2001, p. 52).

Social support is an important form of communication in social networks (Albrecht & Adelman, 1987; Gottlieb, 1985), and athletes sometimes seek support including guidance, understanding, and reassurance within these networks to help them deal with their injuries and make decisions such as whether or not to play injured (Nixon 1994). Within many athletic subcultures, however, "the messages athletes receive about playing with pain and injuries are colored by a culture emphasizing the value of physical risk taking and sacrifice (Nixon 1994, p. 341). Athletic participation at a high level is inherently risky by nature. While exercise is generally linked to good health, athletes' training and play "often involves sharp and intensive bursts of activity," which increase

the likelihood of injury (Waddington, 2000, p. 22). The culture of sport, however, is such that "across the sporting arena, injuries are unintentional consequences rarely talked about and intentionally down played" (Secrest 2010, p.1). Because of this, athletes may be reluctant to reach out for support from anyone, because their sport ethic and sports socialization has led to the belief that pain and injuries are normal and must be accepted (Curry & Strauss, 1994; Kotarba, 1983; Nixon, 1992, 1993a, 1993b, 1994).

This "sport ethic," as it is referred to by Hughes and Coakley (1991), can lead to a reluctance in student-athletes to talk openly about their injury experiences, particularly to authority figures such as coaches and athletic trainers. Alternatively, injured student-athletes may reach out to teammates instead, "who offer advice rooted in a culture of risk and sacrifice that emphasizes the value of playing hurt" (Nixon, 1994, p. 341). What advice athletes receive can then affect their personal decisions, which can determine whether or not they get the physical care they need (Nixon, 1994).

Nixon (1994) described the "interaction networks with significant others in [student-athletes'] campus athletic subculture" as "interactive sportsnets," and assumed that how student-athletes handle their sports-related pain and injury partially had to do with these types of relationships (p. 341). In a study of 156 Division I student-athletes who had experienced an injury that kept them out of participation for at least five days, Nixon looked at "the willingness of athletes to talk with these significant others about pain and injuries, the likelihood that they will turn to these significant others for help or encouragement with their sports injuries, and the likelihood that they will avoid coaches, teammates, and trainers when they are hurt or try to hide their pain and injuries from them" (Nixon, 1994, p. 340). The results showed that 49.4% of the 156 injured athletes

he surveyed felt pressured by their coaches to play hurt, and 41% felt pressured by teammates. In terms of who the student-athletes reached out to for support, a majority turned to their athletic trainers (75%). Many athletes also tried to avoid or hide their injuries or pain from significant others within their sportsnet. Specifically, 66% said they "had tried to avoid or hide from coaches," 47.4 from trainers or physical therapists, and 46.8% from their teammates (Nixon, 1994, p. 346).

A paradoxical finding from Nixon (1994) was that injured athletes were more likely to reach out to their coaches for support both when they were sympathetic as well as when they pressured them to play. This may be due to the mixed messages coaches have been shown to give players. As part of this research, Nixon also collected coaches' surveys at the injured athletes' institutions. These surveys showed some inconsistencies in the coaches' attitudes, which were apparent in the results:

> Coaches overwhelmingly denied that the physical welfare of athletes is ignored; overwhelmingly disagreed that athletes should risk long-term disability consequences of playing hurt; and overwhelmingly rejected the idea that winning is everything and losing is nothing. Further, most of the coaches in this sportsnet expressed much sympathy for injured athletes. (Nixon, 1994, p. 351)

At the same time, however, a high percentage of these coaches agreed with a cultural belief system that glorifies risk, pain and injury themes, and "acknowledged that injury and pain should be expected by athletes, that athletes were likely to do everything possible to play, [and] that they respected athletes who played hurt and tried comebacks from serious injuries" (Nixon, 1994, p. 351). These coaches also expected their athletes to push themselves to the limit, and a majority held a "no pain, no gain" philosophy (Nixon, 1994, p. 351).

These conflicting messages student-athletes receive from their coaches and peers can complicate their recovery process. Once athletes are cleared to return to the playing field, the psychological effects of an injury can still persist, particularly if athletes rushed their recovery due to social pressures. Bianco et al. (1999) found that some athletes made compromising decisions in terms of their health in favor of their athletic participation. For example, fear of losing a spot on the team or missing an important upcoming competition could lead student-athletes to return to play even if they weren't fully mentally or physically ready to do so, and how athletes perform immediately after returning from injury can alter whether or not they are able to gain their confidence back. Johnston and Carroll (1998) found that athletes who test the injured body part and compete successfully once they return to the field are more likely to regain their confidence than those who don't immediately perform well.

Motivation wise, not all athletes return to the field after injury strictly for a love of the game (Bianco et al., Gould et al., 1997; Podlog & Eklund, 2005). Injured athletes may feel pressure from their coaches to return as soon as possible, or feel that they are letting their teammates down whenever they are unable to participate. Podlog and Eklund (2005) found that athletes who were more extrinsically motivated to return to sport produced less positive appraisals and experienced more negative emotional responses once they returned than those who had been intrinsically motivated. For example, some of the responses of those who were extrinsically motivated stated that their return was more threatening and ego damaging.

The culture in which athletes exist, the "sport ethic," also has an effect on athletes' return to sport and their psychological state as they do so (Hughes & Coakley,

1991; Podlog & Eklund, 2005). Some of the factors idealized by the sport ethic include "sacrificing for the game, demonstrating character, seeking distinction, and challenging limits by playing with pain and injury" (Podlog & Eklund, 2005, p. 22). Along these same cultural lines, a lot of athletes tie pain tolerance to personal character, and believe that they shouldn't allow pain or injuries to get in the way of achieving their athletic goals. Because of this, athletes who identify strongly to their athletic role and believe in the sport ethic may be at risk to return to sport before they are physically or psychologically ready, which can put their well-being and long-term health at risk (Podlog & Eklund, 2005).

2.3 Theoretical Frameworks of Injury Analysis

The literature shows that injuries can be traumatic events for the athletes that experience them, and that there are cognitive, emotional, and behavioral responses that can occur as a result (Wiese-Bjornstal et al., 1998). Due to differing cognitive appraisals and personal factors, however, not all athletes will react the same to an injury: "Although pain and injuries are almost inevitable for serious athletes in highly competitive sports realms, athletes may differ in their responses to pain and injuries" (Nixon, 1994, p. 340). As Brewer (1994) states, "the fact that the injury has occurred is considered less critical to understanding emotional reactions than is the way in which the injury is perceived" (p. 90). Because of this, a few different models have been produced to provide frameworks for understanding the psychological responses to sport injury. The following section will review some of these theories, including Wiese-Bjonstal's integrated model of response to sport injury, which provides the theoretical framework for the current study.

Physical rehabilitation programs for injuries have a unique system for categorizing injury recovery, and are traditionally conceptualized into three stages of healing by athletic trainers, which are then used for guiding treatment. These are the acute injury phase, repair phase, and remodeling phase. These stages, while useful in aiding an injured athlete in physically returning to the field, do not take into account athletes' psychosocial responses to their injuries (Clement et al., 2015). An alternative approach, suggested by Kamphoff et al. (2013), does include this aspect of the healing process, by using the following phases instead: reaction-to-injury, reaction-to-rehabilitation, and reaction-to-return-to-play. With this model, athletic trainers (ATs) can develop and implement some psychosocial strategies to help an injured student-athlete with the psychological aspect of their recovery.

Grief models have also been applied to the sports injury recovery process, as was the case in Weiss and Troxel's (1986) holistic study of psychological rehabilitation after injury. In this study, they proposed a four-step process of analysis consisting of: "a. the stressor (being injured), b. cognitive appraisal of the situation or potential stressor (injury) and one's personal resources, c. the emotional response, and d. the consequences of stress" (Weiss and Troxel, 1986; as cited in Evans & Hardy, 1995, p. 237).

A stress process model by Wiese and Weiss (1987) considers the sport injury as a stressor that results in cognitive appraisals. According to Wiese and Weiss, "[t]he extent of psychological injury that athletes experience along with the physical injury varies greatly with the personal attributes of the athletes themselves and the context within which physical injury occurred" (1987, p. 321). In Wiese and Weiss' model the cognitive appraisal process takes place in two steps. The first, the primary appraisal, is

an initial assessment, in which individuals ask themselves, "First, what happened?" (1987, p. 322). The second appraisal is an evaluation in which the injured athletes ask themselves if they will be able to deal with what happened to them. How individuals answer these questions results in their personal appraisal of the situation, which affects their emotional and behavioral responses to the injury.

Another model by Evans and Hardy (1995) uses a more dynamic model of grief response, which in the context of sport injury means "an emotional response to perceived loss, and as a process characterized by behavioral and psychological manifestations" (p. 228). The logic for grief models being applied to an athletic injury comes from the idea that grief doesn't have to result from the loss of a physical object or person. Instead, as explained by Engel (1964), "[g]rief, therefore, occurs as a result of the loss of anything that a person has come to consider a part of her or his natural environment and, therefore, a source of psychological gratification" (as cited in Evans & Hardy, 1995, p. 229).

An integrated model of response to the sport injury and rehabilitation process, by Wiese-Bjornstal et al. (1998), combines these two models (i.e. Wiese & Weiss 1987 and Evans & Hardy 1995), and is the basis for the present study. Wiese-Bjornstal et al.'s integrated model is widely cited among research related to athletes' injury experiences, including the following articles referenced in the literature review for this dissertation: Bianco, Malo, & Orlick, 1999; Clement, Arvinen-Barrow, & Fetty, 2015; Evans & Hardy, 1995; Granito & Vincent, 2001; Green & Weinberg, 2001; Kamphoff, Thomae, & Hamson-Utley, 2013; Milne, Hall, & Forwell, 2005; Podlog & Eklund, 2005; Tracey, 2003.

This model was also chosen because it takes into account the individualized nature of the injury experience, and "encompasses personal and situational moderating factors, as well as cognitive, emotional, and behavioral responses of athletes to sport injury" (Wiese-Bjornstal et al., 1998, p. 46). Wiese-Bjornstal et al. list personality, history of stressors, coping resources, and interventions as preinjury factors that will determine an athlete's stress response to a sport injury. Once an injury occurs, personal factors including the nature of the injury as well as individual differences such as psychological, demographic, and physical differences are taken into account. Situational factors including sport, social, and environmental aspects along with these personal factors will determine the athlete's cognitive appraisal of the situation, which then in turn will affect their emotional and behavioral responses to the situation. Together, the athlete's cognitive appraisal, emotional and behavioral responses will then determine the recovery outcomes for the student-athlete (Wiese-Bjornstal et al., 1998). A visual model of this framework is available in Figure 1 on page 33.

2.4 Conclusion

Student-athletes are a unique population on college campuses, who must tackle the difficult task of balancing their athletic and academic identities and commitments in order to be a successful college student. It is clear from the literature that when student-athletes suffer an injury that prevents them from athletic participation, there are a host of negative psychological and emotional effects that can occur as a result. What is unknown, however, is once an injury occurs, how the psychosocial challenges a student-athlete endures affect their academic roles and responsibilities, as well as the preexisting balance that existed between their athletic and academic identities. This study aims to

explore this gap in the literature, to gain a better understanding of this aspect of a student-athlete's injury experience.

The study is significant in that it combines two areas of the current literature on student-athletes: their conflicting athletic and academic commitments, and the injury recovery process. While much is known about the different ways student-athletes are negatively affected by injuries, an unexplored area of research is how these consequences affect their ability to be successful as students. While the current research is exploratory in nature, it aims to start a conversation regarding the academic effects of the injury recovery process, and hopefully shine light on some of the ways injuries can affect student-athletes in the classroom. This research will guide further exploration of the topic, as well as provide guidance to athletic departments on how they can help student-athletes struggling academically due to a serious injury.

2.5 Research Questions

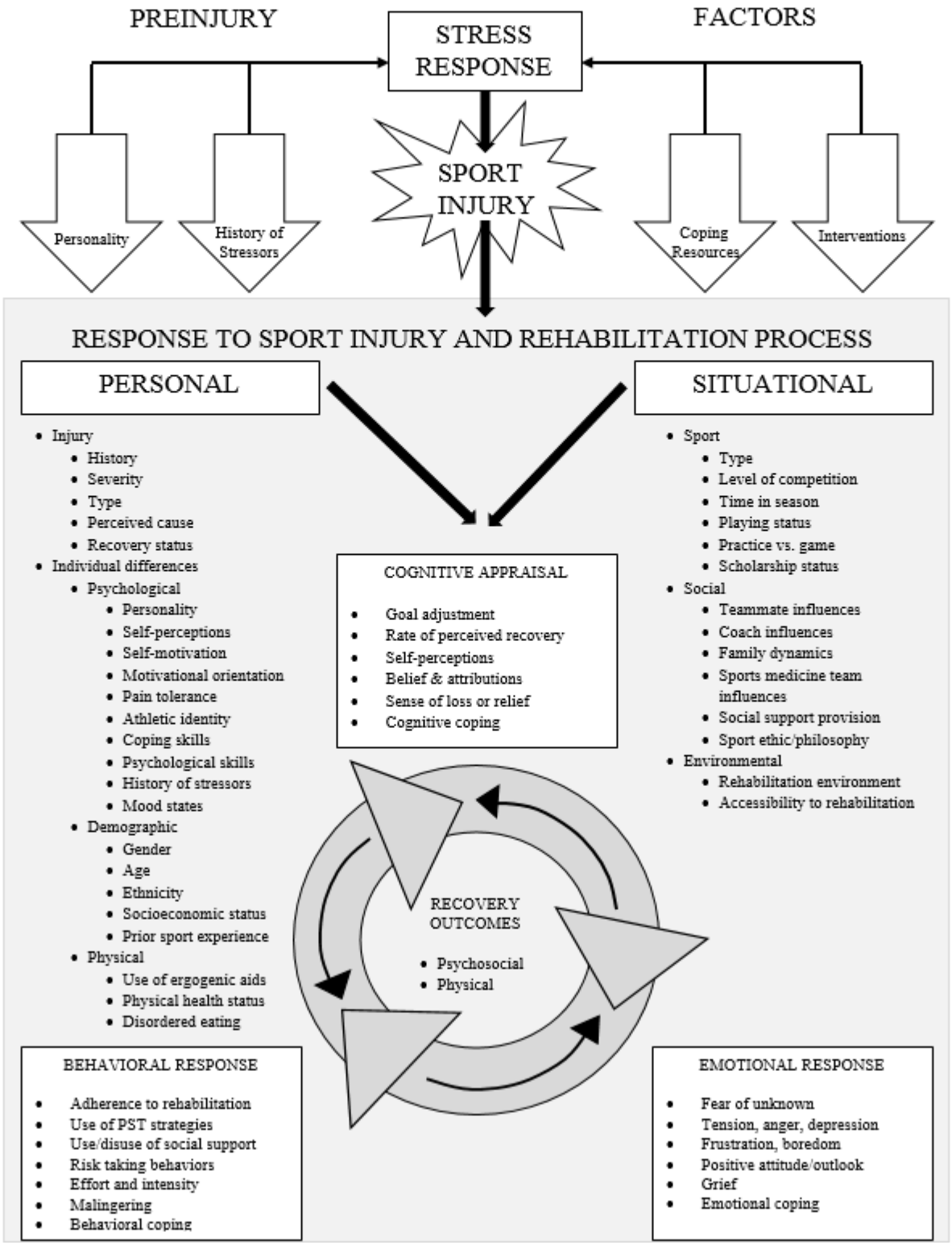
With Wiese-Bjornstal et al.'s (1998) integrated model of response to sport injury as the theoretical framework, and through a qualitative research design, this study aims to explore the following research questions:

R1: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience in response to a serious injury?

R2: How are these psychosocial responses related to a student-athlete's academic life (psychologically and behaviorally)?

R3: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities (psychologically and behaviorally)?

Figure 1. Integrated model of response to sport injury. Adapted from "An Integrated Model of Response to Sport Injury: Psychological and Sociological Dynamics," by D.M. Wiese-Bjornstal, A.M. Smith, S.M. Shaffer, and M.A. Morrey, 1998, *Journal of Applied Sport Psychology, 10*(1), p.49. Reprinted with permission of the Association for Applied Sport Psychology (http://www.appliedsportpsych.org).



CHAPTER 3

METHODOLOGY

3.1 Design and Procedures

This research study utilized a qualitative design to explore the research questions: R1: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience in response to a serious injury? R2: How are these psychosocial responses related to a student-athlete's academic life (psychologically and behaviorally)? And R3: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities?

The first part of the design was an ethnographic pilot study. This part of the data collection took place at a public university in the Mid-Atlantic region of the United States. The university's sports teams compete at the Division I level, which is the highest level of athletic participation in the National Collegiate Athletic Association (NCAA). The pilot study was conducted in one of the training rooms at the university over the course of the Spring 2016 academic semester.

The purpose of this pilot was an exploratory analysis aimed at better understanding some of the ways student-athletes react to injuries, and to test the feasibility of studying this idea further. The results of this pilot study were then used to shape some of the questions for the second part of data collection: in-depth, semi-structured interviews. While the ethnography detailed the experiences of any student-athlete present in the training room of the university at which it took place, the interviews were limited to student-athletes who had suffered serious injuries, and included participants from other Division I universities.

Those who agreed to participate in the interviews were also asked to fill out a short demographic questionnaire, as well as an eight-item Type T Risk Taking Survey (F. Farley, personal communication, September 8, 2016). The responses to these questionnaires added another component to the data, to further understand the experiences of the student-athletes who participated. Together, these data sources were used to answer the research questions and make suggestions for future research. The following sections will review each step of the research methodology in more detail.

3.1.1 Ethnographic Pilot Study

An ethnographic pilot study was conducted in the spring 2016 semester at a public university in the Mid-Atlantic region of the United States. This pilot was conducted as part of a Doctoral level course called "Ethnographic Research Methods," with the results of the ethnography culminating in the final project for the class. At the time the pilot study took place, I had not yet determined the details of the research questions for this dissertation. I knew that I was interested in studying the effects of injuries in student-athletes, and wanted to learn more about that subject before committing to it. Additionally, I had thought of the possibility of examining how the effects of injuries are related to academics, but was unsure whether or not this topic would produce any results. Van Teijlingen and Hundley (2001) state that one of the reasons to conduct a pilot study, aside from the testing of specific research instruments, is to conduct a "feasibility stud[y]," or mini version of a full-scale study (p.49). The purpose of this ethnographic pilot study falls into this feasibility study category, as its goal was to see whether or not my research ideas had any grounding.

Because my intention with this study was to gain a broader understanding of student-athletes' injury experiences, it explored the following research questions: A. What are some of the ways student-athletes react physically and emotionally to being injured? and B. What are some of the social effects that occur as a result of experiencing an injury as a student-athlete? While these research questions were analyzed separately and prior to the interview data, their answers relate to and fall under the first research question, R1, for this dissertation: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience in response to a serious injury?

The university at which this took place has a total of 18 Division I teams. Men's teams include basketball, crew, cross country, football, golf, soccer, and tennis, and women's teams include basketball, cross country, fencing, field hockey, gymnastics, lacrosse, rowing, soccer, tennis, track and field, and volleyball. The study took place in one of three athletic training rooms at the university, which is used by all student-athletes there with the exception of the men's football, men's basketball, and women's basketball teams. I visited the athletic training room for two hours every week over a period of eight weeks, starting on January 26th 2016, and concluded data collection on March 9th, 2016. Of those eight weeks, one week was skipped for data collection as it fell over the school's spring break period.

In the athletic training room, I most often sat at a small desk and computer area used by some of the athletic trainers, and athletic training students that were also present. It was located about 10-15 feet in front of the medical tables used by the athletic trainers and student-athletes. For organizational purposes, I numbered the tables in front of me

from Table 1 to Table 7, going from left to right. I stayed at the table most often while athletic trainers were working with their athletes, as not to interfere with their work or the athletes' physical therapy. From this vantage point, I could see and hear most interactions, except at times when the room got crowded and certain conversations were drowned out. I would sometimes approach athletes when I saw that they were using either the electronic muscle stimulation machines or icing, as this meant they would be sitting for a period of at least 10 minutes, and wouldn't be receiving any further instruction from their athletic trainers. I would approach the athlete and introduce myself as the researcher conducting a study on injured student-athletes, and ask if he or she were comfortable answering a few basic questions. Of all the student-athletes I approached, all were willing to speak with me regarding their experiences. These were informal interviews, in which I would ask base level questions regarding their injury and how they had been affected by it. Over the course of the eight weeks of data collection, I conducted seven of these informal interviews (an average of one per week).

3.1.1.2 Site Description

The athletic training room at the university where the pilot study took place is located in the lower level of a building on campus that is used for both academic and athletic purposes. In it there are a number of classrooms that are used for instruction, as well as a gym, rock climbing wall, and indoor stadium. To access the training room each week, I had to go up to the information desk located near the entrance, and have someone get a key and open a door to the lower level for me. The first time I requested this access, I had to show an email correspondence between myself and the Executive Senior Associate Athletic Director, to prove that I was granted access to this restricted area of

the building. Student-athletes have access passes that allow them to enter the lower level of the building, so they don't have to go through this same process. To get to the training room, I walked down a set of stairs, then down a hallway past the court-level of an indoor stadium, and the training room was located on the right. Immediately upon entering the athletic training room is a small area with rubber floors, medical tables, and various equipment used for physical therapy purposes (e.g. medicine balls, small free weights, large rubber bands, etc.). Past this on the left is the pool room, where whirlpools are located that athletes can use for either hot or cold baths. On the right are the medical tables, and towards the back of the room on the left is the computer and desk area where I sat observing the training room. In the very back of the training room are two offices, one used by the head athletic trainer, and another used by the three full-time athletic trainers. These offices have glass windows so you can see in and out. There is one more small office to the right of the computer area, which is the doctor's office. There are no windows here, as it is a private place where athletes can speak to their doctors or surgeons, or (as I learned), where they can go for privacy if they are visibly upset and want to talk to an athletic trainer in private.

As described on the university's Athletic Training page online, their mission statement is as follows: "As a highly motivated team of professionals, we strive to provide an excellent standard of care to all our […] student-athletes, who compete at the highest level of intercollegiate athletic competition, and in doing so aid in developing outstanding leadership experiences […]. Through sound medical and rehabilitative principles, excellent care, and proper consideration given to both the personal and team goals of each student-athlete, this goal can be achieved" ("Athletic Training," 2016).

The mood of the training room is both professional and casual at the same time. It is meticulously organized and clean, with undergraduate trainees constantly cleaning and clearing off medical tables after they have been used. The athletic training staff dresses in a somewhat matching uniform, consisting of khakis, a university shirt (shirts were varied among the athletic trainers), and athletic sneakers. The dress code for the athletes consisted of any form of athletic clothing, which usually consisted of their issued university clothing. Hung on the wall of the athletic training room were two televisions, which most often displayed ESPN (Entertainment and Sports Programming Network). The noise level varied in the room dependent upon the number of athletes present, but even on slow days many conversations were carried out, both relating to injuries and rehabilitation, and not.

At the start of the study, I had a base level of understanding regarding the culture of athletic training rooms and the typical activities that took place in one. I spent over a year rehabilitating two injuries in an athletic training room when I was a student-athlete from 2008-2012; however, these two injuries were at a much smaller Division I university. Although I had a base of knowledge regarding training rooms, I didn't know how this particular one would function, or how it may be similar or different than the one I had experienced. It is possible, however, that these prior experiences reflected upon the way in which I observed this specific training room at my present university.

3.1.2 Dissertation Data

The data collection that took place after the ethnographic pilot study included in-depth semi-structured interviews as well as two questionnaires. A total of 10 Division I student-athletes were sampled to take part in this portion of the research. This section will

provide more specific information on these participants as well as the research methodologies that took place.

3.1.2.1 Participants

Ten Division I student-athletes from four universities were sampled for this study. These four universities are all within the Mid-Atlantic region of the United States. Two are public universities, one is private, and one is a private Ivy League institution. Six of the 10 participants (60%) were female, and four (40%) were male. In terms of race and ethnicity, seven participants (70%) identified as white, two (20%) as Hispanic, and one (10%) was an international student from Germany, putting him in the NCAA's "Nonresident Alien" category for race and ethnicity (NCAA, 2010). The sports among the 10 participants included: soccer, rowing, swimming, lacrosse, and cross country/track & field.

Specifically, I interviewed two female rowers, two female swimmers, two female lacrosse players, one male soccer player, one male swimmer, and two male cross country/track & field athletes. Their injuries ranged in terms of recovery time from 4-6 weeks, to 1-1.5 years, and one participant had ongoing health issues as a result of a sprained ankle that lasted from his freshman through his senior year. Academically, one participant (10%) was a freshman, six (60%) were sophomores, one (10%) was a junior, and two (20%) were seniors. Each participant had different academic majors, which were as follows: international business, film and media arts, sport and recreational management, nursing, cognitive science, mechanical engineering, journalism and mass communication, economics, biology, and exercise science.

In terms of their injuries, seven of the participants (70%) needed to have surgery for their injuries, and three (30%), did not. Eight (80%) of the injuries were specific to the legs of participants, and of those eight, five (50%) were knee injuries. Additionally, there was one (10%) hip injury, and one participant (10%) suffered blood clots in his legs and lungs that resulted from complications from a sprained ankle.

Two of the participants (20%) reported being on a full athletic scholarship, six (60%) had a partial scholarship, and two (20%) were ineligible for athletic scholarships due to attending an Ivy League school. Seven of the participants (70%) reported that they were starters on their team, or at least were before they were injured. One participant (10%) did not respond to this part of the survey, and two (20%) said the question did not directly apply to their sport.

Seven of the participants' (70%) reported their hometown as a location within the Mid-Atlantic region of the United States. One participant (10%) listed their hometown as a location in New England, one participant (10%) in the South, and one participant (10%) was an international student from Germany.

There was an even split between participants in regards to whether or not they lived on campus. Five (50%) said they did, and five (50%) said they did not. In terms of who they lived with, five participants (50%) stated they lived with a mix of teammates and non-teammates, four participants (40%) said they lived with non-teammates, and one participant (10%) lived with teammates.

Participant data can also be found in the tables on page 46. Here, participants are numbered from 1-10 based on the chronological order in which they were interviewed. All participants were also given a pseudonym in order to protect their anonymity.

3.1.2.2 In-depth Semi-structured Interviews

Data collection for the in-depth semi-structured interviews took place during the spring 2017 academic semester. Participants included 10 Division I student-athletes who either had sustained or were rehabilitating a serious injury at any point from August 2016 through April 2017. Participants were sampled via a combination of convenience and snowball sampling. Due to the ethnographic pilot study, I had formed relationships with several of the athletic trainers at the university at which the pilot study took place. Through these connections, I was able to sample a portion of student-athletes that fit the inclusion criteria for the study (30%). The other participants were sampled through personal connections I had with other current Division I student-athletes (70%).

For the sake of this study, a serious injury is defined as an injury that keeps an athlete out of competition for a period of more than 21 days. This is in accordance with the National Athletic Injury/Illness Reporting System (NAIRS) as well as the National Collegiate Athletic Association (NCAA), who classify a minor injury as one that causes a loss of participation between 1-7 days, a moderate injury 8-21 days, and a major injury more than 21 days (Covassin & Evans, 2007; Thompson, Halpern, Curl, Andrews, Hunter, & Macleod, 1987; as cited in Secrest, 2010 'unpublished dissertation'). This definition, based on the variable of time lost, is also in congruence with a number of other studies on the subject (e.g., Evans and Hardy, 1995; McDonald and Hardy, 1990).

Interviews were audio recorded, and took an average of 39 and ½ minutes. Three of the interviews took place in person in a private office setting, as these student-athletes were able to travel to my office. The other seven interviews were conducted over the phone. Participants were compensated for their time by receiving a $15 gift certificate to

Amazon.com. Those who completed the interview in person received this compensation immediately following data collection, while those who completed the interview over the phone were mailed compensation.

The questions for the interview were adapted from the interview protocol used by Clement et al. (2015), which can be seen in Figure 2 on page 47. Clement et al.'s model is based upon the same theoretical framework as this study, which is the Wiese-Bjornstal et al.'s (1998) integrated model: "Initially the data was guided by the integrated model. This allowed us to identify any possible cognitive appraisals and emotional and behavioral responses that might have emerged as a result of the injury process, as well as if any personal or situation factors influenced such processes" (Clement et al., 2015, p.97). Organizationally, their interview questions are structured based on the phases of rehabilitation as suggested by Kamphoff et al. (2013), which are reaction to injury, reaction to rehabilitation, and reaction to return to play.

My interviews started with the 24 questions from this study, which are divided into the following four sections: A. Background, B. Cognitive and emotional responses, C. Behavioral responses, and D. Readiness for return to play. Where my study differs from previous research on the subject, and therefore aims to fill the gap in the literature, is with the addition of section E. called "Academic responses." The questions for interview section E., "Academic responses," can be seen in Figure 3 on page 48.

Table 1. Participant Information: General

#	Pseudonym	Gender	Ethnicity	Age	Academic Year	Major
1	Manuel	Male	Nonresident Alien	21	Sophomore	International Business
2	Melissa	Female	White	20	Sophomore	Film & Media Arts
3	Lauren	Female	White	19	Sophomore	Sport & Recreational Management
4	Lisa	Female	White	20	Sophomore	Nursing
5	Angela	Female	Hispanic	19	Sophomore	Cognitive Science
6	Carlos	Male	Hispanic	21	Senior	Mechanical Engineering
7	Caroline	Female	White	22	Senior	Journalism & Mass Communication
8	Adam	Male	White	20	Sophomore	Economics (not yet declared)
9	Michael	Male	White	20	Junior	Biology
10	Amanda	Female	White	19	Freshman	Exercise Science

Table 2. Participant Information: Athletic

#	Pseudonym	Sport	Injury	Injury Date	Estimated Recovery	Surgery
1	Manuel	Soccer	Broken fibula	Sept. 17th 2016	6 months	Yes
2	Melissa	Rowing	Tibia stress fracture	Nov. 2016	2 months	No
3	Lauren	Rowing	Torn MPFL, malalignment, cartilage damage	May 30th 2015	1-1.5 years	Yes
4	Lisa	Swimming	Dislocated knee, torn ligament	July 2016	3-4 months	Yes
5	Angela	Swimming	Labrum tear in hip	Sept. 25th 2016	4-6 months	Yes
6	Carlos	Swimming	Sprained ankle, scar tissue, blood clots in legs and lungs	Ongoing since fall 2014	Cast-3 weeks Boot-2 weeks	Yes
7	Caroline	Lacrosse	Torn ACL, torn meniscus	Feb. 2016	6-8 months	Yes
8	Adam	Cross Country, Track & Field	Tendonitis in knee	Dec. 18th 2016	4-6 weeks	No
9	Michael	Cross Country, Track & Field	Stress reaction in femur	Nov. 2016	3-4 months	No
10	Amanda	Lacrosse	Torn MPFL, dislocated knee	Oct. 28th 2016	7-9 months	Yes

Figure 2. First 24 Interview Questions. Reprinted from "Psychosocial Responses During Different Phases of Sport-Injury Rehabilitation: A Qualitative Study," by D. Clement, M. Arvinen-Barrow, and T. Fetty, 2015, *Journal of Athletic Training*, *50*(1), p. 97. Copyright 2015 by the National Athletic Trainers' Association, Inc.

Table. Interview Questions

Section A: Background

1. Could you tell me about yourself?
2. Could you tell me about your life before or around the time of your injury?
3. Could you tell me about the time when you got injured?

Section B: Cognitive and emotional responses

4. Describe your initial thoughts and emotions after sustaining your injury.
5. How did these thoughts and emotions change once you knew about the seriousness and impact of the injury?
6. Could you explain how your injury has affected you?
7. How do you feel you have coped with your injury?
8. How do you feel about your injury now?
9. In your own words, what has been the most challenging aspect of being injured?
10. Could you tell me how you did or how you are coping with that?

Section C: Behavioral responses

11. Can you tell me about specific methods or techniques you have used to cope with your injury?
12. When you got injured, who did you turn to for support?
13. Could you tell me about your experiences with that support?
14. Could you tell me about your rehab experience?
15. How did it progress?
16. What was the environment like?
17. Can you tell me anything specific that you feel has helped your recovery?
18. In a similar manner, can you tell me anything specific that you feel has hindered your recovery?

Section D: Readiness for return to play

19. Tell me about your goals (life and sport) since sustaining your injury.
20. What are your goals when you return to play?
21. How motivated are you to return to play?
22. What do you miss about participating in your sport?
23. What were/are your thoughts and feelings concerning return to play?
24. How can you use this experience in life and on the playing field?

Figure 3. Additional 7 Interview Questions.

Section E: Academic Responses

25. Could you tell me about your thoughts and emotions regarding your schoolwork since your injury?

26. How has the balance between your athletic and academic commitments changed since sustaining your injury?

27. In what ways have the emotional effects of your injury affected your schoolwork?

28. How motivated have you been academically since becoming injured?

29. Tell me about your academic goals since sustaining your injury.

30. What steps have you taken to stay on top of your schoolwork since becoming injured?

31. What advice would you give to other student-athletes dealing with injuries in terms of their schoolwork?

Figure 4. Demographic Questionnaire

Please fill out the following information about yourself:

Injury: _____ Date of Injury: _____

Estimated Recovery Time: _____ Surgery (yes/no): _____

Age: _____ Ethnicity: _____Gender: _____

Academic Year: _____ Major: _____ GPA: _____

Sport Team: _____ Position: _____

Scholarship Status: _____

Role on the Team (starter vs. nonstarter): _____

Hometown: _____

Where you live (on or off campus): _____

Who you live with (teammates or other): _____

3.1.2.3 Questionnaires

In addition to the interview, participants were asked to fill out two short questionnaires. The first was demographic in nature, and included questions regarding participants' injuries, as well as their age, ethnicity, gender, academic year, major, grade point average (GPA), sport team, position, scholarship status, role on the team (starter vs. nonstarter), hometown, who they live with (teammates or other), and where they live (on or off campus). This provided background information on the participants, specifically targeting some of the personal and situational factors as listed in Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998). The full demographic questionnaire can be seen in Figure 4 on the page 48.

The second questionnaire, and final part of this data collection was an eight-item Type T Risk Taking Survey, which was developed by former president of the American Psychological Association, Frank Farley (personal communication, September 8, 2016). This survey aimed to gather background information specific to the category, "risk taking behaviors," under the behavioral responses as listed in Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998). Specifically, this survey analyzed the extent to which participants consider themselves to be individuals who engage in risk taking behaviors. As discussed in the literature review, student-athletes exist in a "culture of risk," where injuries are common, and playing through pain and injuries is often glorified (Nixon, 1994, p. 341). This survey was meant to determine whether or not the student-athletes are self-aware of the risk taking nature of their participation in Division I athletics. The questions for this survey are available in Figure 5 on the following page.

Figure 5. Type T Risk Taking Survey. Adapted from "Type T Risk Taking Survey," by F. Farley, personal communication, September 13, 2016.

Please indicate the extent to which each statement applies to you.

	Does not apply at all	Applies slightly	Applies somewhat	Applies very strongly
1. I would like to have as many exciting experiences in my life as possible.				
2. I am an excitement-seeker/thrill-seeker.				
3. My friends would call me a thrill-seeker.				
4. I am a risk taker.				
5. I enjoy taking mental chances or risks (e.g. I share a new idea when I am not sure how other people will take it).				
6. I enjoy taking physical chances or risks.				
7. I like to have discussions with people who have ideas that are different or opposite to mine.				
8. I often act impulsively.				

3.2 Analysis

Data analysis followed a specific set of procedures in order to ensure consistency. This section will detail the data analysis process, as it took place for the different sets of data that were collected for this study.

3.2.1 Ethnography

The ethnographic pilot study aimed to answer the following research questions: A. What are some of the ways student-athletes react physically and emotionally to being injured? And B. What are some of the social effects that occur as a result of experiencing an injury as a student-athlete?

Once data collection was complete, I came up with a categorizing scheme to analyze the data that included physical, emotional, and social effects of injuries. Physical effects included any instance of pain I observed in athletes, or any mention by the athlete themselves of pain and its effects on their daily life. For emotional effects, I observed athletes' emotional reactions to their injuries, including frustration and sadness. In terms of social effects, I observed athletes' relationships to their athletic trainers, as well as listened for any mention of other relational effects of injuries, such as to their teammates, family, or coaches.

I then read through my field notes, organizing patterns by these categories, and ultimately came up with a more nuanced set of 13 codes. These codes were as follows: 1.Physical effects: pain, toughness 2. Emotional effects: coping, expectations, frustration, pride, sadness and 3. Social effects: athletic trainers, coaches, family, and team. What also emerged from the data, which did not fit the three aforementioned categories, were effects on the daily life of student-athletes, as well as their plans for the future. I used the

software tool Dedoose to apply the codes to the data until saturation was achieved, and ultimately the data was organized into the larger themes found in the results of the pilot study: Pain and Toughness, Emotional Reactions, Conflicting Commitments, Role on the Team, Relationship with Athletic Trainers, and Effect on Future Plans.

3.2.2 In-depth Semi-structured Interviews

This study has a qualitative design and because of the exploratory nature of the research, the data analysis focused on the ways the data "illustrate the range of the meanings of the phenomenon, rather than the statistical significance of the occurrence of particular texts or concepts" (Zhang & Wildemuth, 2009, p. 309).

Specifically, data analysis utilized a modified inductive analysis process. Thomas (2006) describes the analytic strategy and question for a general inductive approach as: "What are the core meanings evident in the text, relevant to evaluation of research objectives?" (p. 241). The outcome of inductive analysis is that the researcher identifies categories most relevant to the research objectives. The analysis of data in this study is a modified version of inductive analysis because it is based in Wiese-Bjornstal et al.'s (1998) integrated model of response to sport injury. The codes used in data analysis were pre-established categories that exist within this model.

Zhang and Wildemuth (2009) outline the following steps for qualitative data analysis processes:

Step 1: *Prepare the Data.* This step involves transforming the data into written text before analysis can begin. Once interviews were completed, audio recordings were sent to a transcription service where they were converted to transcripts in written form.

Step 2: *Define the Unit of Analysis.* The unit of analysis used for coding was each sentence or complete thought by the interviewee.

Step 3: *Develop Categories and a Coding Scheme.* The coding scheme for interview data came from Wiese-Bjornstal et al.'s integrated model of response to sport injury. Each unit of analysis was coded into one of the following categories: cognitive appraisal, behavioral response, or emotional response. This was true for the analysis of all three research questions. For R1, the data was also coded according to the second set of more specific codes within these three categories. For cognitive appraisal, these codes are: goal adjustment, rate of perceived recovery, self-perceptions, beliefs & attributions, sense of loss or relief, and cognitive coping. Within behavioral responses, the more nuanced codes are: adherence to rehabilitation, use of PST (physical therapy) strategies, use/disuse of social support, risk taking behaviors, effort and intensity, malingering, and behavioral coping. Lastly, under emotional responses the more specific codes are: fear of unknown, tension anger and/or depression, frustration and/or boredom, positive attitude or outlook, grief, and emotional coping. For R2 and R3, these more nuanced codes were not used, as they apply more to athletic responses and didn't directly translate to the academic lives of student-athletes. Instead, the coding was based on the three larger categories of cognitive appraisal, behavioral response, and emotional response.

Step 4: *Test Your Coding Scheme on a Sample of Text.* In order to ensure consistency within the coding scheme, Zhang and Wildemuth suggest coding a small sample of the data, and then testing it for intercoder agreement. In order to establish this inter-rater reliability, another graduate student with experience in qualitative methodologies separately coded 10% of the data. A Cohen's kappa coefficient of .88 was established

based on the three larger codes, while for the more nuanced codes the Cohen's kappa was .89. According to Landis and Koch (1977), kappa statistics are rated by the following strengths of agreement: <0.00 is "poor," 0.00-0.20 is "slight," 0.21-0.40 is "fair," 0.41-0.60 is "moderate," 0.61-0.80 is "substantial," and 0.81-1.00 is "almost perfect" (p.165).

Step 5: *Code all of the Text.* Coding of interview data started on April 10th, 2017 and was completed on April 21st, 2017. Data were coded using the web application Dedoose.

Step 6: *Assessing Your Coding Consistency.* To ensure coding consistency, each interview was initially read carefully, coded, and then compared to other coded interviews to ensure that codes were applied consistently throughout the data.

Step 7: *Draw Conclusions from the Coded Data.* Once the interview data were analyzed, they aided in drawing conclusions related to the research questions for this study, as well as directions for further research on the subject.

In order to improve the validity of the study, another step was added on to the process once the interview data were analyzed. Participants who stated they were interested in seeing the results of the study were contacted once data analysis was complete. They were asked to review the part of data analysis that referred to their injury experience, which could be identified by their individual participant number and pseudonym, and provide feedback as to whether they thought they were accurately represented. This member checking strategy is positive in that it "gives participants opportunity to correct errors and challenge what are perceived as wrong interpretations," (Cohen & Crabtree, 2006, para.2). In total, nine of the ten participants were contacted following the study, as one was not interested in being contacted again. These nine participants received an email in July with a draft of the dissertation that included all of

the interview data and analysis. They were asked to read the document and check that the information on their injuries were correct, and that any analysis of their quotes was accurate. Of the nine that were contacted, five responded and approved of the current version of the study. The other four did not response to the follow-up email.

3.2.3 Questionnaires

The Demographic Questionnaire was used to gather general information on the participants of the study. Specifically, it targeted some of the personal and situational factors as listed in Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998). These responses were used to create Tables 1 and 2, regarding general and athletic information of the 10 participants. Additionally, descriptive statistics were carried out in order to provide a more complete look at the participants sampled for this study.

The Type T Risk Taking Survey was scored numerically. On the Likert scale of possible responses, "Does not apply at all" was worth 1, "Applies slightly" was worth 2, "Applies somewhat" was 3, and "Applies very strongly" was 4. Based on these numbers, and since there were eight total questions, possible scores ranged from 8-32. A score of eight is considered a "little T," or someone who does not self-identify as a risk taker. The highest possible score, 32, would be considered a "big T," or someone who does identify as a risk taker. Scores between the lowest and highest possible scores were interpreted based on where they fell between these two numbers.

3.3 Role of the Researcher

As the author of this dissertation, it is important that I acknowledge my positionality in the subject of student-athletes with serious injuries. As an undergraduate at American University from 2008-2012, I was a member of their Division I women's

lacrosse team which competed within the Patriot League. I was a successful collegiate athlete, earning a shared starting position as a freshman, and my entire life revolved around lacrosse, which I loved. Halfway through my sophomore season in 2010, I landed awkwardly while going after a ground ball. A misdiagnosis of a torn meniscus allowed me to play the rest of the season in pain, and not at 100%, but what mattered to me was I didn't miss much playing time. It wasn't until after the season when I received a full Magnetic Resonance Imaging (MRI), that I was told I had in fact torn my Anterior Cruciate Ligament (ACL) in my right knee. My estimated time of recovery after surgery went from a few weeks with a torn meniscus, to a full six months with a torn ACL. I was upset, but had a surprisingly positive outlook given the situation. A more serious surgery and physical therapy meant I would get to spend the summer in my college town with some of my teammates, and my six month recovery would take place entirely in the off season, allowing me to be ready to return by my junior season.

My junior season was the best of my life. I led the team in goals, and look fondly back on that spring as some of my happiest moments. I entered my senior year confident and happy as ever; ready to make the best of what I knew would be my final season. In our first game on our home turf, I pivoted hard attempting to break a double team, and went down in excruciating pain. I knew immediately that I had torn my right ACL again, and that it was over. This time, my outlook was not as positive. I was devastated, and couldn't understand how something I had dedicated most of my life to could be taken away from me so suddenly. I was stubborn, and furious. I did not want to red shirt and stay at American another year, or to try to join an entirely different team in graduate school. I attempted to play out the season with my torn ACL, but only lasted a few

games before what was left of my ACL collapsed and I was physically unable to do so. The rest of the season and the additional six months of physical therapy following surgery in May were brutal. I sought therapy to deal with the experience, and was not fully myself again for at least a year.

What stood out to me the most, and started the idea for my research on the subject of student-athletes with serious injuries, was the fact that I had endured two of the exact same injuries, at the same school, with the same team, and that they had been two entirely different experiences for me. This solidified for me the importance of individual and situational differences in injury experiences, as outlined in the theoretical framework for this study in Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998).

These experiences are what led to my research questions and topic for this dissertation, and it is possible that they are reflected in the way that I gathered and analyzed the data for this study. For example, injuries and responses that I felt related to my own might have subconsciously been given more attention.

While these experiences were difficult to go through, the most positive lesson I took from them was that playing a sport at a high level is not about the statistics or the wins or the glorification. While I was injured and unable to physically contribute to my team, I learned that it was more about the opportunity to do something you love every day, and to be a part of a family that loves one another and supports each other in their goals. I hope that my personal experiences allowed me to establish some rapport with the student-athletes interviewed, who allowed me to delve into their own experiences with serious injuries.

CHAPTER 4

RESEARCH FINDINGS

4.1 Ethnographic Pilot Study

The goal of the ethnographic pilot study was to test the feasibility of studying student-athletes' injury experiences in a larger study. It explored the following research questions: A. What are some of the ways student-athletes react physically and emotionally to being injured? and B. What are some of the social effects that occur as a result of experiencing an injury as a student-athlete? The results are organized into the following categories related to these questions: Pain and Toughness, Emotional Reactions, Conflicting Commitments, Role of the Team, Relationship to Athletic Trainers, and Effect on Future Plans. How each of these connects to the research questions will be further detailed in the discussion.

4.1.1 Pain and Toughness

One of the central findings from the pilot study was the relationship between student-athletes and pain. Although it was clear that many of the student-athletes in the athletic training room were in pain at different points due to verbal and physical cues, there was a tendency to downplay the amount of pain they were experiencing, or ignore it altogether. This was an emotional response to injury that led to behavioral changes as well, and in several instances, student-athletes who had been in pain waited as long as they could before seeking treatment.

One prime example was an exchange that happened between the head trainer, Bill, and a female on the women's crew team named Leslie, who came into the athletic training room with a shoulder injury. Leslie explained to Bill that two weeks ago, she

heard a pop in her shoulder while working out. Bill wanted to know why she waited two weeks to come in, to which Leslie responded that at first, her arm didn't hurt but would occasionally go numb. Once she started to get more severe pain, however, she "got nervous" and came to the training room. She said that unless she's "really hurt," her tendency is not to say anything. When Bill pressed her on this issue, she responded that she didn't want anyone to think she was making something up to get out of work, especially her coaches, who had told her to stop working only if she were in pain. This was also part of what led her to delay seeking treatment, and in an informal interview with Leslie later that day, she told me the "pressure to perform" was also a part of it.

In Leslie's instance, there were a couple of different factors that led her to wait so long to seek treatment. She explained that in general she tends to keep pain to herself unless it's really bad, in part because she doesn't want her coaches to think she is faking it. Although Leslie knew something was wrong, as her arm was going numb, her commitment to the team and stress to perform well led her to continue rowing until the pain was absolute. By doing so, she put the team and her coaches' opinions of her above her personal health.

Another rower from the men's crew team, a sophomore named Rob, also experienced an injury mid-season but waited two weeks before coming in to the athletic training room. In his instance, he tore his meniscus (cartilage in his knee) while getting off of a rowing machine with his foot still strapped in. I was able to ask him about his injury five days after receiving surgery. Rob explained to me that he participated in the first three weeks of practice for the spring semester, despite having been injured the first week. After he fell attempting to get off the rowing machine, he felt something was

wrong, but decided to ignore it. His knee felt weird over the next week but he wanted to push through it. It wasn't until the second week after, when his knee "felt like it was going to explode," that he decided to come into the training room.

Rob's case is a little different than Leslie's as he doesn't mention his coaches as a reason for ignoring his pain. He did, however, also try to push through his injury in an attempt to continue rowing as long as possible. Part of the problem may be that student-athletes experience pain as a regular part of their lives due to the physical rigor of their sports, and mistake injuries such as these as part of that. It seems, however, that both Leslie and Rob were acutely aware that what they were feeling was more than every day pain, but would rather ignore and wish it away than acknowledge the fact that they may be injured and as a result will have to stop rowing for a period of time.

A tool used by the athletic training room to measure pain is a sheet of paper with a 0-10 scale of numbers and corresponding faces. On the left, 0 equals "no pain," and there's a smiling face above it. Furthest to the right is "hurts worst," and the face is frowning and crying. This is sometimes shown to athletes in the training room by their trainers, as a way to let them know how they're feeling. Student-athletes, however, can be reluctant to accurately express their pain, as shown by the following examples.

An athletic trainer, Tim, spoke to a female student-athlete about her pain levels. The athlete says, "Pain is absolute. No matter what I'm doing; sitting, standing, anything." Tim asks her to rate her pain on the scale, to which she responds that at a level of pain where she couldn't stand it, she would consider a 7.

This illustrates an issue with the subjectivity of the pain scale. This female student-athlete is aware of the 0-10 nature of the scale, but states that she wouldn't ever

consider her pain to be above a 7. To consider her pain level to be at 8-10 might show weakness or an inability to cope, and she doesn't see herself ever reaching that level.

In another interaction with the pain scale, a tall, blonde, male student-athlete responded to his trainer, Joel's inquiry about the amount of pain he was in that day. The student-athlete laughed, and said he is at a 4 today, because his knee was uncomfortable during lift. He then changes his mind and says he's only at a 3 today; it wasn't that bad. He goes on to say the only day he was a 10 was the day he twisted his ankle because that was really bad, and then again changes his mind and says that day was actually a 9.

This athlete had a chance to tell his trainer how he was feeling, and after giving a gut reaction of 4, verbally convinced himself that it wasn't actually that bad, and lowered it to a 3. He then followed a similar behavioral pattern while remembering a past injury. For some reason, both of these student-athletes didn't want to admit that they could ever reach a level of 10 in terms of pain, even on their self-described worst days. These instances of student-athletes reacting to the pain they experience exemplifies the importance of toughness in their lives. Being "tough" or "strong" is so important to them that when something like pain from an injury threatens that, they are reluctant to be honest with themselves about how they are feeling.

Unfortunately for some student-athletes, the pain they experience can't be ignored forever, and can lead to the end of an athletic career. This was the case with a female rower I spoke to, Emily, who had been experiencing pain for a long time. In my informal interview with her, I asked if she needed surgery for her injury. She said that was one option for dealing with it. She had gone to a Penn doctor, her home doctor, and the Temple doctor for help. I ask if she has a plan for returning to rowing, to which she

responded no, she's not going back. Emily had always had back pain, but it was always something that was minor and that she was able to push through. But once she got to college, it just kept getting worse to the point where it was unbearable; this was how she finally found out about her herniated disks. She first started having pain in November in her hip. She got treatment for that, it got better a little bit, and then the back pain started. An MRI over winter break showed that she had three herniated disks, and she's been in the training room ever since getting treatment. She says that all of her doctors have encouraged her not to continue rowing.

The end of an athletic career can be a difficult transition for any athlete, and when it comes as a result of injury it can be devastating. Emily, however, had a different reaction to learning that she wouldn't be able to row anymore. When I asked her how she felt that her doctors recommended she stop rowing, she said she wasn't that upset, because more than anything else she was excited to not be in pain anymore. If Emily's doctors hadn't told her to stop rowing, it's possible that she would have continued pushing through pain to the end of her college career.

4.1.2 Emotional Reactions

This pilot study revealed complex emotional reactions of student-athletes to their injuries, including frustration, sadness, and anger, which came as a result of both personal shortcomings as well as fear of how they were being perceived by others. These excerpts show some of the most prominent examples of emotional reactions that were observed.

An athletic trainer, Bruce, worked with a female student-athlete who was continuing to play her sport despite a knee injury. While discussing her pain levels, Bruce suggested that she wear a knee brace instead of the sleeve she currently had. The

athlete paused, took a deep breath to compose herself as if to prevent getting upset, and asked, "to play?" Bruce said yes, and asked what the problem was, explaining that the brace isn't that different than the sleeve she wears now. She responded, "it's not about that, it's about how I feel wearing it."

In this instance, the student-athlete is hesitant to wear a big medal brace on her knee as opposed to a sleeve. Although they are physically similar as Bruce explained, the athlete knows she will feel different in a brace, perhaps because it will make it more evident to herself as well as everyone else on the field that she isn't physically at 100%. The brace may make it safer to play through an injury since it will provide more support, but what is more important to the athlete is how she feels. It is possible that the brace may cause her to lose confidence, be more aware of her injury, and as a result not play as well. Here, we see an athlete putting her ability to perform as well as her perceived status above her physical health.

Not playing can also be a cause of frustration for athletes. At table 2 one day, a blonde student-athlete named Lauren complained to a friend about someone that asked how she was doing. Lauren's response to the question was snarky: "well I'm not practicing so what do you think?" To Lauren's further irritation, the same person also made the following remark when Lauren told them she needed surgery: "Surgery? I didn't think it was that bad." Lauren rolled her eyes retelling the conversation, annoyed by what she perceived as contempt in the other person's reaction.

For Lauren, the lack of understanding from a peer caused negative reactions. She seemed bitter that she was unable to participate in her sport, and annoyed that someone might not realize how upset she was because of this. She was equally frustrated by this

person's inability to appreciate the seriousness of her injury. As was touched on previously in the example of rower Leslie, student-athletes can be self-conscious about how others perceive their injuries, and worry that others may think they are "faking it." Here, Lauren was agitated that someone suggested her injury might not have been serious enough to elicit surgery.

On a different day, another female student-athlete who was also venting to a friend expressed a similar complaint. At table 3, a blonde female student-athlete spoke to another female student-athlete about tearing something in her knee. She explained that her injury wasn't like an ACL tear in that it didn't "explode." She said when it first happened, no one believed her until she was unable to walk down stairs because of it. Her friend responded sympathetically, saying, "That's crazy." Again, it becomes clear that student-athletes' image to their peers is important to them, and they get frustrated when the validity of their injuries are questioned.

Being injured in general can have the ability to make athletes self-conscious, as was made evident in some of the athletes' reactions to being evaluated by the training staff: Joel, an athletic trainer, asked a female student-athlete with a knee injury to hop off the table and walk towards him "normally" so he could observe how she walks. He asked her to walk about 10 feet, several times. After the third attempt, the athlete said, "you're making me so self-conscious." When Joel asked why, she responded that she didn't know if she's doing it "correctly."

Athletes are generally physically capable and used to performing physical tasks well. For this athlete, the knowledge that she might not be walking the way she's supposed to, and the way she was being observed made her uncomfortable.

Aside from the playing field or the training room, the frustrations of an injury in daily life can also be difficult for student-athletes to handle. In an informal interview with a female track athlete named Geleisa who just had meniscus surgery, she cited her daily pain as one of the hardest parts of being injured: Walking up and down stairs was hard and painful, and just walking around in general. It hurt all the time. "It's just annoying."

For Geleisa, the inability to escape her injury was taxing. Along with all of her responsibilities and other worries, she was constantly reminded of her injury due to the consistent pain. While this was an annoyance for Geleisa, for other athletes having trouble getting around on a daily basis elicits much stronger reactions:

> A female student-athlete with a torn MPFL talked to a friend about how she has been struggling lately with her injury. She gave an example of trying to walk around campus one day after a snow storm: "Ice and slush is so difficult, and I didn't think it would be as difficult as it was[…] I called my Dad hysterically crying[…] It was a breaking point."

In this instance, the student-athlete had a strong emotional reaction to struggling to walk through ice and slush with a hurt knee. Although an everyday task, it was psychologically painful for this athlete because it represented her inability to perform a simple physical task, and as a result ended with her having a mental breakdown.

These are some of the examples of athletes' emotional reactions to injuries that were observed throughout the semester. While the pain and inability to perform are the physical issues athletes have to deal with, they are emotionally hurt as well by their injured state.

4.1.3 Conflicting Commitments

One of the struggles student-athletes face on a daily basis is the balance between their schoolwork and athletic commitments (Watt & Moore, 2001). This came up a lot in

the training room, as athletes expressed the difficulty to manage their time between both, which resulted in a number of different emotional responses including frustration, disappointment, and added stress.

During specific times of the year, dividing time can be even more difficult than usual. For the average student, midterms can be extremely stressful and result in all night studying sessions. For student-athletes, the same is true, yet they also have to meet their athletic obligations and be able to physically perform. This can cause physical stress to their bodies along with the mental stress they are already under:

> A female student-athlete talked to her trainer Joel about being sick: "Yesterday after practice I was coughing a lot. […] Do you think I'm actually sick, or is it because on Monday we had a really hard practice, I slept two hours, went to lift, had two midterms, and then had practice again." When Joel suggested that she gets some sleep, she responded, "I can't, I can't sleep […] I just have to make it to Friday, I have so much stuff to do."

This student-athlete, although in the athletic training room, didn't appear to have any injuries other than being sick, and was clearly stressed about it. For student-athletes who are injured, however, scheduling time for physical therapy can add even more time to their daily schedules, making the difficult task of dividing responsibilities even harder.

One example from this study was a student-athlete who struggled to find a time during the day for his physical therapy. He explained to his athletic trainer that he had to attend a morning lift session, then had class at 9:30am. His class went until 12:00pm, and he had to leave for practice at 12:30pm. They eventually decided to fit him in that morning between the lift session and class. So in one day, this student-athlete went back to back from a lift session, rehabilitation, class, and then practice.

One female rower described these conflicting commitments as the biggest difficulty of athletic participation, despite a nagging back injury. In an informal

interview, she told me that her back is consistently tight, despite her attempts at stretching on her own. She attributed this pain to the "repetitive motion of rowing." When asked what she struggled with the most with her injury, she responded that for her, the hardest part was "the time, with school and rowing," but that she wasn't going to quit.

Along with dividing time between commitments, sometimes activities overlap and students physically aren't able to be in two places they are expected to be at once. They face expectations from their teachers, athletic trainers, and coaches, and sometimes they aren't able to meet them all at the same time. One female student-athlete with a back injury had such an experience, which she shared with her athletic trainer. She explained that she emailed her teacher to let her know she would be missing a class, the teacher never responded, and then got mad at her when she didn't show up. This student-athlete was disappointed because she felt that she did what she needed to ahead of time to communicate her obligations with her teacher, but was disciplined anyway due to a miscommunication.

It can be frustrating to student-athletes when they try to make their schedules work, but are met with resistance. In a similar example, a female track athlete named Lucy had to reschedule a test because of a meet, which her teacher wasn't happy about. In telling her athletic trainer about this conversation, she snidely mimicked her teacher's reaction to her request, saying "I would rather you take the test on Friday." Because of the culture of college athletics, a student-athlete would rarely miss an athletic competition due to an academic obligation. Whereas a student may be able to reschedule taking a test, a track meet won't be put on pause for one athlete. There can be conflict, however, when those in academic positions don't think their students should put athletics as

priority over schoolwork. This can cause student-athletes to make difficult decisions in terms of what is more important to them, which can be detrimental to whatever area they choose as a second priority.

For student-athletes with injuries, physical pain can also directly affect schoolwork, as it can distract them in class. This was the case with several student-athletes in the training room. In a conversation between two athletic trainers, one trainer named Angela talked about receiving a text from a student-athlete who was in class, telling her that their foot had gone numb while sitting in a lecture. For this athlete, a physical symptom of their injury was a disturbance in class, as well as their decision to text their athletic trainer to let them know what was going on.

For another student-athlete sitting in a chair for a long period of time was aggravating to a back injury. She explained to her athletic trainer Joel that the pain with her injury was off and on, and that she specifically "felt it a lot sitting in class today." Along with being physically distracted in class, the emotional distress of injury can also cause a disturbance in a learning environment. A female student-athlete who had recently had surgery and was on crutches had such a reaction. She spoke about this experience to Joel, also her athletic trainer. When he asked how she was doing, she replied sarcastically: "I almost cried twice in class, so that was good."

Despite the fact that student-athletes are a part of the overall student population and must complete the same academic tasks as their peers, they also feel that they are their own separate group. While discussing an upcoming men's basketball game, one female student-athlete expressed annoyance at the fact that the student-athletes had to sit in the general student-section with everyone else. Another female student-athlete showed

a similar attitude, stating her ability to be able to miss class when she needed to for her sport: "That's one of the benefits, you can be like "I'm an athlete." These instances show a belief in the student-athletes that they are a separate peer group than students who do not participate in varsity level athletics. It's clear that both in terms of time commitments as well as identity wise, student-athletes struggle with maintaining both the academic and athletic aspects of their lives.

4.1.4 Role on the Team

For student-athletes, their place on the team can be an essential part of their identity, as it tends to be their central peer group (Simons et al., 1999). Unfortunately, an injury can take an athlete away from parts of this experience, resulting in changes to their previous social status within the team. In an informal interview with Leslie, an injured rower mentioned previously, she explained how being injured took her away from her team and thus affected her motivation:

> Being injured sucks because [when you're healthy] even when you're not on the water, you're just on the rowing machines, you're still working with your team towards a common goal. When you're injured though, and you have to do a 60-minute bike workout, you just think, "what's the point." The goal is just to be done. It's not the same. It makes you question whether all the work that comes with being injured is worth the effort to stay on the team.

To Leslie, the team is so important that her individual goals seem insignificant in comparison. Even on a team that competes at the individual level such as track and field, the effects of being left out can be difficult to deal with. Geleisa, an injured track athlete, shared with me that the hardest part of being injured for her was not competing with her team. She said it "sucks" not being able to travel with them, and when they did well at their indoor track championship, she was sad that she "wasn't a part of that."

Putting the team above yourself is a trait valued on athletic teams. This can be done in a number of ways, including passing to a teammate for an assist, making sacrifices in your social life to be healthier for the team, and making the team commitments a priority in your life over personal interests. One athlete who had recently had surgery was a unique example of this idea. This particular female came into the athletic training room on crutches, as she had just received some sort of shots for a knee injury. She was in a lot of pain, and said jokingly to her trainer:

> You should just take me out back and put me out of my misery, like a race horse […] Do you know if a teammate dies everyone on the team gets a 4.0 because of the stress it causes? I'll just take one for the team.

Although she was joking, the sentiment here is the same as the above examples, the idea that the team as a whole is greater than one's self. The comparison of herself to a race horse is also powerful. It is customary for race horses to be put down if they break a leg, due to the fact that it is unlikely they will recover. This athlete's suggestion that she be put down "like a race horse" potentially speaks to how she feels about her own injuries; that she is of no use because of them, and would be better off helping the team in another way [It's worth noting that 1. It is not true that if someone dies everyone else on the team gets an automatic 4.0 GPA that semester, and 2. Her athletic trainer took this reaction very seriously, and responded with concern as opposed to laughing at her choice of words].

Although some athletes are self-motivated, in many cases they ultimately place more value on the goals of their team above all else. Unfortunately, an injury can cause their role in this peer group to change, which can cause distress and feelings of isolation.

4.1.5 Relationship with Athletic Trainers

Along with changes to their role on a team, another social effect that occurred among injured athletes was finding social support through the people helping them physically recover from their injuries: their athletic trainers. On the university's Athletic Training website, the "role and responsibility of the Athletic Trainer (ATC)" is described as:

> The Certified Athletic Trainer is an allied healthcare professional who is specifically educated and trained to care for the student-athlete. While possessing a college/university degree, he/she must pass a national certification examination, obtain proper state licensure and remain current and up to date with all continuing education units. There are currently six domains found in the athletic training profession as defined by the National Athletic Training Association and the Board of Certification. ("Athletic Training", 2016)

In addition, a list of their responsibilities is provided, which includes "A. Prevention of Athletic Injuries, B. Recognition, evaluation, and assessment of athletic injuries, C. Immediate care for athletic injuries, D. Rehabilitation, treatment, and reconditioning of athletic injuries, E. Organization and administration of athletic training programs, and F. Professional development and responsibility" ("Athletic Training", 2016). While this is an accurate representation of the daily actions of the athletic training staff as I observed, what is missing from this description is the emotional support they provide to their athletes who are struggling with the reality of their injuries.

This was apparent not only to me but also the student-athletes, as one female student-athlete remarked to her athletic trainer, "I think you should schedule time for emotional support, because we complain to you about everything"

Crying was not an unusual sight in the athletic training room. Whenever athletes were visibly upset or wanted privacy for another reason, their athletic trainer would take

them into the doctor's office to speak to them. Because this was a private area and had no windows, I was unable to hear conversations that went on inside; however, I usually had a sense of why an athlete was entering the room.

One day, a female student-athlete came rushing into the athletic training room, hysterically crying, and motioned with her hand for her athletic trainer, Joel, to follow her into the doctor's office. Although he was working with someone else at the time, he immediately stood up and followed her. Right before entering the room, I heard the student-athlete say to him, "I just fucking got hit by a car!"

This exchange says a lot about the relationship between athletic trainer and student-athlete. After being hit by a car, the first place this girl went to was the athletic training room to notify her trainer. In her hysterical state, he was the one she wanted to talk to about what had just happened, and he was more than willing to speak to her, help her, and calm her down.

There were many other instances of athletic trainers caring for their student-athletes and comforting them when they needed it. When a male soccer player came into the training room with a left ankle injury, his trainer, Bruce, pointed out that at least it wasn't his right foot, calling this a "small victory," which made the athlete smile. Athletic trainers often remained positive such as was the case here, even when their athletes were upset or worried about their injuries. In response to a female student-athlete who had just had a knee operation, her athletic trainer Joel told her, "I'm confident this [rehab] is going to help you." When a male student-athlete was frustrated and questioned some of his physical therapy exercises, his athletic trainer, Bruce, reassured him that they had a purpose: "I know it seems I'm making you do things that

aren't going to help you reach your goals, like stretch. But there's a reason for these things."

The athletic trainers were aware of the emotional needs of their athletes, checking in with how they were doing both physically and psychologically during their physical therapy sessions. Geleisa, the injured track athlete, explained how her physical therapy session had gone one day to her trainer, Amy. In response, Amy wanted to know "not necessarily physically, but how are you feeling?" Geleisa replied that she didn't know, she just felt "hesitant." Amy again inquired about her emotional state, asking, "Are you feeling better? Other than nervous how do you feel?"

Amy's questions regarding Geleisa's feelings show an understanding on her part that the injury process is difficult both physically and emotionally for student-athletes. All of the athletic trainers that I observed were in tune to their athletes needs in both of these ways, and offered their support in whatever ways they could.

4.1.6 Effect on Future Plans

A finding that emerged from the data that was not originally included in the coding scheme, was that some student-athletes reacted to the emotional and social effects of their injuries by reevaluating their future plans.

Because the student-athletes that participated in this study were on non-revenue teams, there is a smaller chance that they would continue to participate in their sport at a high level once they graduate college. But just because these athletes may not pursue a career as a professional athlete, doesn't mean that their injuries can't affect their goals for the future as well. I asked Rob, the men's crew athlete who had torn his meniscus, whether or not he planned on sticking with rowing after he recovered from surgery. He

said yes, because he wants to be a police officer when he graduates so he couldn't let anything mess that up. Participating in his sport was a part of his journey towards reaching this bigger future goal.

While to a football player, an injury might mean losing a chance at a future career, for a non-revenue athlete an unexpected injury can be an early end to a lifelong athletic pursuit. Unfortunately, this seemed to be the case for an African American track athlete named Geleisa that I had the chance to speak with. She had a torn meniscus, and her final spring track season was already in progress. I asked if she thought she would be able to compete again. She said conferences were early in May, so she hoped to be able to compete then. Her doctor said if it all goes well, she might be able to. But she can't come back until it's100% healed, because that is the leg she jumps off of, so there's "a lot of impact." She said she was supposed to have reached a certain level by where she was now, but she's not sure she's where she's supposed to be. She got a little teary eyed, paused, and said that she tries not to get too upset about it. She mentioned that since she's a senior, she either heals and competes in her last conferences, or this is it for her. Along with competing in conferences, another of Geleisa's goals is just being healthy when she graduates college. She doesn't want to come back and try to run, only to be hurt again and have to deal with it after graduation.

This goal shows an acknowledgment on Geleisa's part, that although her running career is ending, that other aspects of her life are moving forward, and she doesn't want to be held back by her injury. Although she wants to be able to compete in conferences, she also shows a fear of reinjury if she pushes herself physically to be able to do so. My final question to Geleisa was whether or not she would continue to run or jump once she

graduated, which she responded to by smiling, holding up her injured leg and shaking her head no, “probably not.”

The end of an athletic career can be a difficult transition for any athlete, no matter how it happens. Injuries can complicate this process, by ending a career unexpectedly, or making it difficult for an athlete who planned to participate in athletics until their graduation to do so.

4.1.7 Discussion of Results

The purpose of this ethnographic pilot study was to test the feasibility of studying the effects of injuries in student-athletes in a larger study, as well as the possibility of studying injury experiences in relation to academics. This pilot study explored the following research questions: A. What are some of the ways student-athletes react physically and emotionally to being injured? And B. What are some of the social effects that occur as a result of experiencing an injury as a student-athlete? Pain and Toughness, Emotional Reactions, and Conflicting Commitments were the three categories that detailed the physical and emotional reactions to injury within the first research question. Role on the Team and Relationship to Athletic Trainers outlined some of the social effects of injury. Lastly, Effects on Future Plans was a finding that emerged from the data as a result of both the emotional and social effects of injuries.

Within Pain and Toughness, what was found through analysis of the data suggests that injuries challenge a sense of identity in student-athletes, making a population who prides themselves on strength and toughness consequently feel vulnerable. Under Emotional Reactions, the most common effects were frustration, sadness, and anger, which resulted in part from the physical frustrations of injury. These same emotions were

also evident specifically as a result of difficulty in staying on top of multiple obligations, as explained in Conflicting Commitments. Unfortunately, the effects of injuries within this sample had ripple effects into areas of their life outside of athletics, including socially. Some student-athletes found their relationship to their teammates changing, as a result of missing time in team activities and lack of participation due to their injury, as described in Role on the Team. Within the category, Relationship to Athletic Trainers, a positive social effect emerged as some of the student-athletes were able to find social support through their athletic trainers, despite their primary responsibility being the physical health of their athletes. Lastly, Effect on Future Plans emerged as a finding, as the physical, emotional, and social effects of injury sometimes cause student-athletes to reevaluate their goals among different aspects of their life.

This research also demonstrated that there are a number of ways injuries can relate to the academic lives of student-athletes, as was made evident through the physical and emotional pain that affected some of the participants in the classroom, as well as some of the scheduling issues that occurred between the student-athletes' conflicting commitments. Frankland and Bloor (1999) mention that within qualitative research, pilot studies can provide the researcher with a "clear definition of the focus of the study" (p.154). The results of this pilot study gave me the confidence that the psychosocial effects of serious injuries, and how they are related to the academic lives of student-athletes, was something worth exploring further.

4.2 In-depth Semi-Structured Interviews

The results of the in-depth semi-structured interviews are separated into three sections, based on the three research questions. These are further broken down into subsections as well, and the results are further analyzed in Chapter 5: Discussion.

4.2.1 Research Question 1

The first section of results explores the first research question: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience as a result of a serious injury? The results are organized by Wiese-Bjornstal et al.'s (1998) integrated model of response to sport injury. Responses were coded according to the cognitive appraisals, emotional responses, and behavioral responses listed in this model, and are listed in this section following that same order.

4.2.1.1 Cognitive Appraisals

The first section is cognitive appraisals, which includes the following responses, in order: goal adjustment, rate of perceived recovery, self-perceptions, belief and attributions, sense of loss or relief, and cognitive coping.

The first cognitive appraisal, goal adjustment, was experienced in some way by all 10 of the participants. Because these student-athletes had serious injuries that kept them from competition for a minimum of 21 days, many of their athletic goals needed to be modified as a result. For some student-athletes, this meant putting their long-term goals on hold and instead focusing on getting back to where they were pre-injury. For example, Manuel explained that since being injured, his new goal was simply "to walk again," and then to eventually "play soccer again." While his goals of going professional

in the future didn't change, he said while injured, his new strategy became to take things "step by step."

Lisa also came up with new goals that involved getting back to where she had been previously: "I guess right now it's just like trying to get back to swimming, 'cause I still can't use two of the strokes." Lauren wanted to get back to where she was pre-injury as well, but in a slightly different way, as she wanted to get to a point where she didn't "have to worry about [her] knee 24/7." For Amanda, just getting through the injury process became a new goal: "I think the biggest goal is, generally, just getting back...you know, like get through my rehab."

Caroline initially thought she would try to return from her ACL surgery in time to play fall ball (off-season lacrosse games that don't count towards a team's record), but at some point had a change of heart: "I was kind of like what the hell is the point of rushing into fall ball when the games don't count?" Instead, she adjusted her goal and focused on getting back for season instead, which she was able to achieve.

Other student-athletes, however, had goals they had to let go of due to their injury. Michael, for example, was one of those athletes: "I definitely had time goals that I wanted to achieve by the end of the season, and that's just not, like not realistic anymore." To compensate for this loss, Michael said he would push those goals "into next year," and "work twice as hard to get there, hopefully without getting injured." Instead, his new focus became getting "back on [his] feet and running again."

Melissa started out with a goal of racing the entire season with her team, but realized as it got closer to the March 11th start date that it wasn't going to happen: "I realize now that it's too late in the game. I can't race the first two or three races." She

accepted this change however, saying she was "okay with that" because she needs time to heal, and hoped to race by April instead.

A few of the student-athletes felt that setting specific goals while injured wasn't a good strategy. Carlos started off wondering if he would be back in time for his conference meet, but realized that a better "angle of attack" for him was "going into it with no expectations" in terms of when he would return. Adam shared a similar sentiment: "It's really tough to set goals like that because there's a lot of variables that you really just don't know."

Another part of recovery other than adjusting athletic goals is being realistic about the rate of injury recovery. Sometimes there was a discrepancy between what the student-athletes perceived versus the reality of their injuries.

Melissa, for example, had such an experience: "It took me like maybe two weeks to acknowledge that it was a serious injury." Although she was experiencing a lot of pain during certain exercises such as squats, she thought it was "nothing big" because she could still walk and it wasn't "that debilitating." She eventually found out from her doctors however, that it "wasn't as simple as [she] thought it was."

Manuel also didn't realize how bad his injury was at first, which he attributes to the fact that he had never been injured before. When he first got injured, he thought, "Okay I'm fine." Even when he tried to stand up and couldn't, he still thought he was okay. It wasn't until he woke up the next morning with a "huge ankle," that he started to question it, and two days later until he found out that he had actually broken his fibula.

When I asked Michael what his first thoughts were after his injury, he said he wasn't sure, because he "didn't initially know it was that bad." Although he was

experiencing pain, he thought it was "just some muscular thing" that would go away if he "drank enough water and stretched enough." When he found out that it was a skeletal problem, he was "pretty bummed," but not that surprised either, because he "had two weeks to mentally prepare for the worst."

Adam, also a runner, thought the pain he was experiencing would go away after "a few days," of rest, which eventually became "a few weeks," and then became even more. When he found out he had tendonitis and would be out for 4-6 weeks, he wasn't happy, but was glad it wasn't anything more serious.

Lauren had a different experience than the other student-athletes interviewed, in that she knew something was seriously wrong with her knee, despite some doctors telling her otherwise. At first, she was told by an urgent care physician that she had "sprained a tendon in her knee," and her parents were mad because they thought she was "goofing off." She was given a brace, but her knee kept dislocating and she knew something wasn't right. Eventually she was taken to a hospital where she got the correct diagnosis: a torn MPFL with malalignment, no traction, and cartilage damage in her knee. It wasn't until this point that everyone believed how serious her injury was.

Student-athletes' self-perceptions were sometimes challenged by a serious injury. One athlete, Melissa, shared that before her injury, she thought of herself as "unbreakable." With her stress fracture, however, she had a new mindset: "I started realizing, like I'm not unbreakable. I can break. I have to be careful." Caroline also admitted that she didn't think of herself as someone who would ever have a serious injury: "I've always been like muscular and a hard worker and, I think I was kind of stupid, but like I kind of was like 'that will never happen to me' because I'm so good at

preventative stuff." After tearing her ACL, however, she unfortunately realized "that's just not how it works."

Lauren also described herself as a "hard worker" who didn't want others to perceive her differently because of her injury: "I didn't want to be the slowest, and I didn't...weakness is my biggest fear. Like, I don't want people to look at me as weak." By the time she started to get back into rowing, she was "so tired" of being treated any differently because she had been hurt.

Luckily, she was able to use these self-perceptions as motivation: "I was able to push myself because [...] I didn't want to be looked at as a liability." She thought to herself, "I'm gonna be an athlete now. I'm not hurt anymore," and slowly worked her way back on to the team with that drive.

Another aspect of the cognitive appraisals student-athletes experienced with their injuries were beliefs and attributions. While Lauren sorted through her own self-perceptions, Melissa held beliefs and attributions about others that motivated her to work extra hard towards her recovery. She explained, for example, that while her teammates would say to her, "Oh we need you back out" or "We miss you" or "We really want you to get better," that she didn't always believe them. Instead, she felt that some of them really saw her absence as "an opportunity to get better than [her]."

Caroline's injury made her question things as well. As a journalism student, internships were important, but more difficult to get as a result of the time commitment of her sport. While she tolerated this throughout her college career, it became harder to reconcile when she wasn't playing: "Being injured kind of freaked me out because even though my life goal hasn't changed, I was much more aware of how lacrosse had made

my life goals like a million times harder for me than someone who's a non-athlete." Because of this, she started to question her decisions: "Was lacrosse all worth it?"

Angela, alternatively, found that her injury brought on a new belief about life as a whole. She expressed that she wanted to use her injury as, "not like a turning point, but kinda just to open my eyes really and just see how something can change so fast."

In terms of feeling a sense of loss or relief, there were two responses that kept coming up among the student-athletes interviewed. When injured, what they missed the most were their teammates, and simply playing the sport that they loved.

Lisa, Angela, and Carlos, the three swimmers that participated in the study, all said that what they missed the most while injured was interacting with their teammates. Lisa said that not being able to practice made her feel "distant from [her teammates]," as well as "bored" and "isolated" because she wasn't in the water with them. Angela, similarly, said that what she missed the most was "communication and talking to [her] friends during practice." While she was still physically at practice, she sat at a table doing homework or watching Netflix, which she said was "lonely." This sometimes filtered into connections after practice as well: "I kinda miss all the fun conversations cause then like you get out of the pool and then you talk about stuff that happened in practice [...] and since you weren't in that conversation you kinda feel left out." Carlos also missed "the team environment and being with the team," along with "the conversations in between sets," which he said "sucked" for him to miss out on when he was injured.

Lauren also missed her team, and expressed that with rowing it was a unique experience that she was missing out on: "I missed being a part of something big. I loved the whole team aspect [...] there's no star player. Like you're all in a boat and, it's the

fact that you get so close with those girls, it's crazy." In addition, she simply missed "being good at something," although she admitted she felt "conceited" saying so: "I used to be great at this. That used to be like, my thing, and I didn't have that anymore."

Melissa, another rower, missed her teammates and "the community" of the sport as well, but more than that, missed "the satisfying feeling like you've done something really hard, like you push your body so far that, like, you can't breathe anymore, and your legs are trembling." For her, this feeling, that her body is able to do something so challenging, was what she lost when she was injured.

For lacrosse players Caroline and Amanda, their biggest sense of loss came from not being able to play with their teammates. Caroline described this experience as such:

> When you're on the field, especially with a friend, you're like, we are constantly talking and working together. [The defense is] very much a solo unit and therefore, a lot of stupid, funny things happen on the field, and so for me there's this like, I just definitely could tell that I was getting more distant from the defensive unit, not because it's anyone's fault but I definitely missed, just the camaraderie.

Amanda, a low attacker, also missed the feeling of working together with her teammates. She said, "being on a team and out on the field, all the vibes are just so good." She gave the following examples to further explain this point: "Like, I don't know, a beautiful play that happened, [...] the feeling you get when you make a great pass to someone and they score, or when a play works, or a great clear [...] I think that's the feeling that I really miss." With their injuries, it was hard for both Caroline and Amanda to sit on the sideline and watch these moments happen without them.

For runners Adam and Michael, a mix of both running with their friends and the sport itself were what caused a sense of loss. Adam expressed that what he missed the most was simply, "the running, that's my sport." A close second for him was "running

with the guys." Michael, like Adam, said that "running itself" and "the thrill of competition" were what he longed for while unable to compete, but that he also "felt pretty isolated from [his] teammates," who had "a lot of inside jokes" from practices that he wasn't able to attend.

A few different cognitive coping techniques were utilized by these student-athletes to stay motivated. One in particular that came up was staying focused on the smaller goals they had come up with as a result of their injury.

Caroline, for example, explained that rehab had actually become "very therapeutic" for her: "I like loved seeing results. I loved that they would measure [your leg] and be like 'Oh look, this is how much you've achieved,' like that would have me so amped." Manuel also found that small achievements made him feel better. After his first steps, he was able to "do more, and more and more," which was "good to see." He said that mentally, this was huge for him: "It's important for your mind that you see, like 'Okay, I'm getting forward. I'm getting closer and closer to being back on the field.'"

For Lisa, a swimmer, the moment she was able to get back in the water was a positive and motivating factor for her recovery: "When I first got in the water again like that really helped me 'cause I was like, 'Okay, like I'm almost there, it's almost over.'" Amanda also had a specific moment in her rehabilitation that helped her mentally, which was a task called a "straight leg raise." Because she had experienced the same injury on her other leg before, she was expecting it to take about the same amount of time post-surgery for this achievement. To her surprise, however, it happened more quickly this time: "I wasn't expecting it to be that quick, just 'cause my left had taken so long […] So mentally, having that confidence with being like, 'Okay, well you know, it took four

weeks or whatever after my last surgery, and now it's only taken like a week and a half.'" This accomplishment, however small, helped her stay positive: "So far rehab's been great and I've been super happy with my progress."

Carlos simply described his cognitive coping style as "stay[ing] optimistic" as best as he could. In order to do so, he tried to look at the big picture when the day-to-day was too stressful. If he started to get down, he would think about how he had improved so far, by "looking back like 'Oh, a month ago I felt like this and now I feel like this,' so I'm making progress."

4.2.1.2 Emotional Responses

The emotional responses as described in Wiese-Bjornstal et al.'s (1998) model include fear of unknown, tension anger and/or depression, frustration and/or boredom, positive attitude or outlook, grief, and emotional coping. These responses will be presented here in that order.

Many student-athletes experienced new fears as a result of their serious injuries. For some, this was because they had never experienced a similar injury before. Manuel, for example, experienced his first serious injury when he broke his fibula, which led to lots of questions. He found himself wondering if he would be the same after his recovery: "You ask yourself like, 'Okay, is it gonna be like before the injury? [..] How is it going to be? Like, are you going to be fine? Is it, an issue?'" These were some of the questions that he found were "automatically in [his] head."

Fear of not being able to get back to pre-injury levels of skill and fitness was a common concern that came up. Angela, for example, said that in "the back of [her] mind," her biggest worry was that she would "never be able to get back to where [she]

was." Lauren, similarly, said that her biggest fear of returning to rowing was "not being as good." Amanda also expressed that concern: "I think one of my biggest worries is just coming back and like, not being the same player that I've been." Along with this, she also worried "if something bad's going to happen again, [...] or if I'm going to lose all my confidence when I get back."

Melissa and Michael, who had a stress fracture and a stress reaction, respectively, both worried about coming back at the right time and avoiding reinjury. Melissa said, "I hope I come back at the time when I'm actually healed, like completely. [...] I don't want to come back too soon because I don't want to hurt myself again." Michael, similarly, explained, "I definitely have this fear that it's gonna come back. [...] That's definitely my biggest fear."

Carlos experienced a fear of the unknown, as it took a while for doctors to recognize what was wrong with him. While he ultimately found out that he had blood clots in his legs and lungs, it was scary not knowing what was wrong at first:

> It was kinda hurting to breathe [...] and I had ended up in the ER for the first time, and that was kinda scary just 'cause I had no idea what it was, and there was just nothing to explain it, and no doctor that I saw could explain it either.

Lauren was another participant whose doctors were unable to accurately diagnose at first, and didn't fully realize the serious nature of her injury until after her surgery. When asked what was the most challenging part of her injury experience, she said, "the mental aspect, easily." She continued, saying that "the fact that I didn't know what I was going into, like really messed me up."

Tension, anger and depression were some of the more intense emotional reactions experienced by the student-athletes interviewed. Tension can include symptoms such as

mental or emotional strain, including anxiety, which was experienced by a few of the participants.

Lauren was one of them, who had such an extreme reaction to her injury that she developed "really bad anxiety" from it. Part of what led to this was range of motion exercises she had to do that were excruciatingly painful. Because there was a buildup of scar tissue from her surgery, her physical therapist had to force her leg to extend fully: "I literally just laid on the table and she took my leg and just cranked down on it and you could hear it and I could feel the cracking." Luckily, since she was taking a semester off and was home at the time, her dad was there for support, but this was difficult for him too: "He said he was almost in tears when he saw this. [...] He was holding my hand and I just remember being like, silent tears, and...it was awful." Lauren explained how this experience led to her anxiety:

> After that day, like, no matter what, I could be in a great mood but the second I'd have to sit on that table, like, it was an internal thing and my whole body would shake and I'd have a panic attack. [...] I'd have a panic attack twice a day. It was just, it was just normal.

She said that this anxiety may have hindered her recovery, as it took a long time to regain her range of motion because she was "so afraid" of those exercises.

Caroline, who had been diagnosed with anxiety prior to her injury, also struggled with tension: "My anxiety was so bad, especially leading up to surgery." Part of this was because she likes to stay organized, and she worried how her schedule would be affected post-surgery.

Other athletes had moments of anger, brought on by other people's comments or misunderstandings. Melissa, for example, explained to someone that her stress fracture came as a result of "work[ing] herself so hard," and they responded by saying, "maybe

you should know your limits." This was her reaction to that exchange: "That really pissed me off because I was like, 'What are you trying to say? I've reached my limit and I can't do anything after that?'" On a positive note, Melissa added that such comments "only fuel [her] fire" to come back after her injury stronger than ever.

Lauren was another athlete angered by someone's comment regarding her injury. After comparing results from a timed rowing test, one of her teammates commented that Lauren "probably would have been the fastest one, if she didn't get hurt," adding, "but she got hurt so now she's not going that fast." Lauren said this got her "so angry" because she "had problems with people looking at [her] as more of a liability rather than an athlete." Like Melissa, this motivated her to work even harder.

Unfortunately, some athletes experienced symptoms of depression as well. The first few weeks after learning she tore her labrum in her hip were especially difficult for Angela: "I told my mom and I just broke down crying. [...] I definitely was really upset and distraught about it [...] it really took a toll on me, emotionally especially." Caroline, who struggled with anxiety before her surgery, was worried about becoming depressed as well. Although she knew she had a proclivity for depression and anxiety, her emotional response to her injury surprised her: "I remember I didn't expect to cry [...] like I'm a fairly pragmatic person [...] And I remember I found out and I immediately cried for so long." Despite this, however, she was overall pleased with how she handled her emotions throughout the experience:

> I was worried about depression, but I was so on top of it that it never got out of hand. I was never crazy depressed. I was probably a normal level of depressed for someone who had just torn their ACL, which was huge for me.

For Caroline, the ability to stay self-aware and not let herself fall into a deeper depression, despite the circumstances, made her feel that she handled the situation "really well."

Frustration and boredom were common emotional reactions to serious injuries and the recovery process, for a number of different reasons. Physical rehabilitation, for example, is an essential part of recovery, but it wasn't always fun. Amanda had to do four months of what she called "prehab" before she had surgery for her torn MPFL: "I think prehab was definitely tough just 'cause it was boring and it was repetitive and, you know, it was just working on that same muscle, and same leg every single day." Manuel also struggled with mundane tasks in physical therapy: "It's really annoying to be there every day, to do stuff you don't really wanna do. [...] Like I had to pick up marbles every day (with his feet)."

Michael also struggled with rehabilitation, because it didn't provide the same satisfaction he got from running: "At some point it just becomes physically frustrating to not be able to run. I think running is such, can give you such an endorphin rush. It's like such a high that swimming and biking just can't give you."

Other athletes found the physical pain of their injuries to be difficult to deal with. Angela said the most difficult part of her injury was "definitely trying to keep a positive attitude." She attributed this to several aspects of her injury: "My hip would constantly hurt throughout the day so I'd just be like, really negative and I never like to see that for myself. [...] I'd get so frustrated that I couldn't do certain things or, it just like restrained me from doing daily activities."

Even after Lauren was cleared to row again, her injury continued to cause her pain and annoyance: “I just like, couldn’t walk after practice, or like, in general. [...] I was walking 50 feet and my knee would dislocate and I’d have to pop it back in. [...] This is an everyday thing, and it was getting so frustrating.” What made this occurrence even worse, was that some of her doctors downplayed this new information: “I met with the doctors here. And they kept telling me I was fine, like nothing was wrong. And I was like, ‘How is nothing wrong with my legs?’”

Overall, the experience of a serious injury was frustrating on some level for all the student-athletes interviewed. When asked how she felt about her injury after the experience, Caroline expressed that it was just “annoying,” because it “wasted so much of [her] time.” Lisa, similarly, said she “wish[ed] it would go away,” because it was “a hassle.”

While frustration and boredom were common, so were positive attitudes or outlooks regarding the situation. Manuel, who hopes to be a coach later on, found that his injury gave him “a feeling for players who are injured,” which he believes will be “important” in the future. Additionally, he gained a new appreciation for things, including the ability to “walk again.” He even said that his injury was “overall a good experience.” Lisa also said that her injury gave her “a different perspective,” and an appreciation for “how hard an injury is.”

Melissa felt “more connected” to her teammates after her injury, especially others who were injured or had dealt with similar experiences. It also gave her a new appreciation for her sport and the work ethic of those around her: “I read this article that talked about, how, when you’re injured, you’re not with your teammates, you see this

like, glass kind of between you two. And I think it's like, you get to see how hard they really work." As a result, she felt like her injury was "in the long run a good thing" because it gave her this new perspective.

Carlos, who had blood clots, appreciated that things didn't turn out worse for him: "It could've been so serious, like I was supposed to fly back home in December. [...] If we hadn't caught it, I could've had a stroke on the plane." As a result of this experience, in which he "could've died," he learned to be "a little bit more appreciative of life," and to "appreciate everything more and more."

Adam, on the other hand, simply learned to appreciate running again: "When you are running, you, sometimes you take for granted running with the team and running in general." His injury, however, gave him a chance to reset: "It made me realize how much I do love running and just being around the guys on the team. And like, made me super excited to come back to it." Adam also said his injury made him more patient, which Amanda said she gained as a result of her injury as well: "I mean, to go through this tough surgery twice has definitely taught me a lot of patience. It's taught me how to work hard." As a result, she knows that she will be "a stronger person mentally" in the future.

In terms of grief, the most common emotional response was denial. Caroline was one of the athletes who experienced this, sharing that immediately after her injury, she "knew something was wrong" but also was "completely in denial." Here, she describes the injury itself and her first reaction: "I went to get a ground ball, but it was kind of awkwardly close to my feet. And I just jammed my knee backwards. And I immediately was just like, 'What the fuck was that,' basically." In the moments after, she felt "not only physically disoriented," but "mentally disoriented" as well: "Like I went to get my

stuff and I went to the wrong locker. Kind of weird shit like that. Like I don't know if I was...I think I was possibly in shock."

Amanda, who had torn her MPFL previously, also had trouble accepting her injury when it first occurred:

> Mentally, in the back of my head I feel like I knew that it felt the same when I did my left. But I was trying to convince myself that it was just like a tweak and nothing really happened, and I didn't feel the tear, I didn't feel the pop. When in reality, I did. [...] I tried to convince myself it was something smaller than it was.

Part of the reason she had this reaction, was because she didn't want to think about experiencing the injury again. As she explained, this denial came as a result of "trying to veer away from the reality of it being the same thing."

Lauren, who had the same injury but was experiencing it for the first time, also dealt with some denial. For more than eight months after the injury happened, she tried to rehabilitate it without getting surgery, until one day her coach finally pushed her in that direction. Deep down, however, Lauren had always suspected this would eventually be the case:

> I knew I needed surgery the day I couldn't finish the workout in Florida. [...] I think subconsciously, I knew I needed it the day I got hurt, but I didn't want to accept it 'cause I'm like, 'Well what if I tried harder?' And still today, like I'll look back and be like, 'Well what if I was exaggerating it? What if I could have just pushed through it?' That's something that goes through my head all the time.

Unfortunately, once the reality of needing surgery hit, it was hard for Lauren to handle. She got a train ride home, and remembers not even listening to music the whole way, because she was "completely numb." When she eventually was home, she got into her mom's car and "just started to sob."

Crying was a coping mechanism used by several of the athletes as a way to deal with their intense emotions. Melissa, for example, "broke down crying" once she got the

results of her MRI back letting her know she had a stress fracture. Amanda, alternatively, allowed herself some time and space to process her thoughts after she found out about her injury. Because she had experienced the same injury before, she felt "a rush of a lot of emotions," as well as flashbacks to her first surgery. What was helpful for her, was to take a few days to "really think it out and just kind of get prepared for what was coming."

4.2.1.3 Behavioral Responses

The behavioral responses recorded were adherence to rehabilitation, use of PST (physical therapy) strategies, use/disuse of social support, risk taking behaviors, effort and intensity, malingering, and behavioral coping. The following section details how these behavioral responses were experienced by the participants, with the exception of malingering. No instances of this behavior—the act of exaggerating a physical or psychological problem in order to avoid work—were recorded in the data.

A behavioral response all the student-athletes displayed was an adherence to their rehabilitation. When asked how she coped with her injury, for example, Lisa said she simply "did what the doctor told [her] to," which involved physical therapy three times a day. Carlos shared that for him, "going through the motions" of his rehab wasn't bad, because he could "feel it helping" and knew he was making progress. Melissa, similarly, found that even when rehab became difficult and monotonous, she was able to stay focused by "reminding [her]self that everything has a purpose."

For Angela, rehab after surgery was especially enjoyable: "Postsurgery, I loved it. I think I made great improvements so quickly. I was able to start walking again and even start running." Amanda even said that she was "super excited" to start rehab once she got back to school after surgery. This was partly because for her, it became "kind of a stress

reliever": "I'm always looking forward to getting to the training room and just kind of, decompressing and you know, doing something active."

Another behavioral response observed was the use of physical therapy strategies. Michael, who had a stress reaction, needed to take time off and didn't do the same type of rehab as some of the other athletes, but was able to maintain his physical fitness by "cross training" with either swimming or biking. Melissa also had a similar injury, a stress fracture, which meant she wasn't able to run or do a lot of exercises. Similar to Michael, she was able to find alternative ways to workout instead, such as core exercises and lifting.

Angela's injury caused her to learn the importance of another physical therapy technique: "What helped my recovery physically was definitely like just stretching." This, along with using a heating pad, allowed her body to "calm down" once she started working out again after a labrum tear. Amanda, who couldn't run with her team while she recovered from her injury, was able to come up with alternatives instead: "When they would run at practice, I would be doing a plank while they were running, and stuff like that [...] So when they were working I was working, and that was something I was really trying to implement."

The use of social support, in many different forms, was something all the student-athletes interviewed utilized. For some, the social support came from their families. Lauren said when she was first injured as well as when she had surgery, her "parents were always there." Carlos also said that along with his friends and girlfriend at the time, his parents were definitely who he turned to for support. Angela expressed that taking to her family, specifically her sister and her mom, "really helped." Her mom, for example,

called “every day to see how [she] was doing,” and her sister, a physical therapist and athletic trainer, was able to explain things to her about treatment.

Caroline and Amanda, who both had older sisters who also played college lacrosse, were able to talk to them about their experiences. Caroline’s sister, for example, previously had the same injury and “knew a lot about it.” Amanda’s sister, similarly, was there to lend an ear when Amanda needed to “flush everything out” and vent about her frustrations. Michael reached out for support from his siblings and his parents, but in a different way than some of the other athletes, in that they wouldn’t discuss running or his injury: “It’d never be about sports. It’d just be like about anything else, like hanging out. I think I internalized the frustration about running for the most part.”

Another peer group that injured athletes turned to for support was their teammates. Lauren, for example, lived with two rowers who helped her put things in perspective when she was hard on herself: “They’re like, ‘you’re not just going well for someone that had knee surgery, that didn’t really begin walking, like six months ago. Like you’re doing well for, like, an actual athlete.’” Amanda said that two of her teammates became her “substitute sisters” for her, since her biological sister couldn’t physically be with her. She explained that out of everyone on her team, these two girls “had the most presence while [she] was going through the tough times.”

Manuel, who had to use a scooter to get around after breaking his fibula, had to physically rely on his roommates, three guys who were also on his soccer team. Because he lived on the third floor and there wasn’t an elevator in their building, Manuel had to call them every time he needed to get upstairs, to carry his scooter and help him up.

While he felt it was “kind of annoying” that they had to help him so much, he also said that if they were ever injured, he “would do the same for them.”

Along with their teammates, these student-athletes were able to connect particularly well with other injured athletes. Lisa said that in the training room at her school, the injured athletes would hangout together and try to cheer one another up. Angela also said that talking to other athletes who had surgery around the same time as her was beneficial to her recovery: “That was really cool, to meet people and see like how they’re struggling but also overcoming it together.”

The athletic trainers themselves, while responsible for the athletes’ physical recoveries, were also there for emotional support at times. Angela’s trainer, for example, was “so supportive” and tried to “connect with [her] personally,” which made the process “a lot easier” for her. Carlos described his athletic trainer as “very helpful and very knowledgeable,” adding that his “positive, very relaxed” attitude made his recovery “a positive experience.”

In terms of their coaches, some athletes had positive experiences with that social support, while others did not. Melissa found support from her coach, who shared her own “personal experiences with injuries” with her and was there for her to talk to when she needed it. Angela, however, said that the support from her coaches was “kind of lacking.” Specifically, they weren’t there to support her emotionally: “I would try to talk to them about it and they didn’t really care. They were just wondering when I was gonna get back in.” Unfortunately, she felt this hindered her recovery, because it “really hurt” her, and “put [her] in a bad place.”

Two of the athletes, Lauren and Caroline, got outside help from psychologists. Lauren's coach and athletic trainer suggested the idea to her, to help her deal with the panic attacks she started to have during her rehab. This ended up being a good decision, as she went from having panic attacks twice a day to one or two a week. Caroline decided to talk to someone as well, and had a "really great therapist" who helped her when she "started to slip a bit, as far as depression goes." She said this experience was "super helpful" and the therapy helped her "work through some of the larger life questions" she started to have after her injury, which she wouldn't have been comfortable talking to her teammates about.

Risk taking behaviors were evident in a few of the participants. Lauren was one of them who was told by her doctor that there was a "99.9 percent" chance she needed to have surgery for her injury. Not wanting to accept that, Lauren decided to take her chances and work through it, because she thought she "could be that 0.1 percent and be a miracle child." Unfortunately, she did ultimately have to have the surgery for her torn MPFL, but not before spending eight months trying to overcome the injury.

Carlos, alternatively, had to "cut back on risks" when he was taking blood thinners to treat blood clots. As a result, he had to be cautious and avoid any potentially risky activities, because he had to "be careful not to his [his] head or anything." Even simple activities like running and basketball were sports he had to take a break from.

Michael, interestingly, found that when he wasn't running, his academics became a source of excitement instead:

> I feel like I got the same rush in like taking exams all of a sudden. It sounds super nerdy, but all of a sudden, like it was the same thing. It's the same thing as running track or, it's just like putting a lot of time into something and then testing

> yourself at the end of it. It's the same thing, whether running or academics. [...] It's a nice substitute.

The risk taking of running (or academics) for Michael comes from investing his time and effort in something, and then being put on the line and having to prove himself in a timed test of that activity. While the pressure in these situations would cause some fear or anxiety, for Michael it comes as an exhilarating thrill.

Another of the behavioral responses exhibited by participants was the effort and intensity they gave to their recovery. Angela said that since the day she had surgery, she was "ready to get back" to swimming, and pushed herself "as much as [she] could" in rehab to be back as soon as possible. Caroline also worked hard on her rehab, explaining that she is "super competitive," and that rehab for her became a new way to compete and get "any physical exertion out." As a result, she "wouldn't take no for an answer and would just go HAM" on her exercises.

Something that Caroline said motivated her throughout this process was staying "a month ahead of all the milestones" that were projected for her recovery. Lauren also used a timeline as motivation, as she wanted to recover in 11 months as opposed to the estimated "year to a year and a half." Melissa, who was putting in a lot of extra hours during her recovery, decided she wants to continue putting in the same effort once she's recovered as well: "Once I get better I'm gonna just substitute that extra time I spent in the training room with extra workouts...to compensate for how long I've been out."

Aside from giving their recovery their best physical effort, there were a few other behavioral coping mechanisms used by the athletes as well. Although a lot of the student-athletes felt socially isolated from their teammates when they weren't able to practice or compete with them, there were other ways they tried to stay involved. Manual for

example, “tried to be involved in the team as much as possible,” by “watching every practice from the stands” and supporting the team in different ways, like chasing balls that went off the field with his scooter. Adam also tried to stay engaged with his team during his injury, which was a skill he learned “in high school when [he] had some minor injuries.” While recovering from his tendonitis, he made “every effort to be there every day” with his team, whether that was at meetings, going to the gym or locker room when they were there, or meeting his teammates for dinner: “I made every attempt to stay part of the team. I know that’s super important.”

Other athletes reached out and spent more time with friends outside of the team when they were injured. Michael said that with the free time he gained from his injury, he was able to “commit to new friendships and new relationships” that he previously couldn’t. For him, this was “a good experience” that allowed him to get out of the “social bubble” he was typically in with the other student-athletes at his school. Adam also spent some of his injured time hanging out with other friends, including people he “hadn’t seen in a while” or didn’t normally spend time with. He also tried to be more social in general, because normally with running he wouldn’t go out a lot on the weekends. With his injury however, he had the ability to do so and tried to take advantage, because he thought it was “probably good for [his] mental health.”

Some behavioral coping mechanisms were not as social. In Melissa’s case, she turned to music as a means to “distract” herself, as well as watching more movies. Lauren, on the other hand, used drawing as a way to cope. Another strategy that Lauren used to feel empowered by her injury, was “finding beauty through the pain,” by taking “really strong” pictures of her scar. She also took a more permanent strategy, by getting a

tattoo that read “endure and defy” on her leg, a shorter version of her personal motto, “endure what’s given to you and defy the odds of the outcome.”

One more, slightly different technique used to manage injury recovery was shared by Michael, who admitted that he had “been eating better food” throughout his recovery. He clarified that this didn’t mean healthier, but simply better food: “I’ve been grubbing out a lot. [...] It’s something that I really want to take advantage of while I can [...] so I eat like a lot of ice cream.” He said this had been helping him mentally a lot, and he hadn’t gained any weight, so “frankly, [he didn’t] feel guilty about it at all.”

4.2.2 Research Question 2

This section of results explores the second research question: How are these psychosocial responses related to a student-athlete’s academic life (psychologically and behaviorally)? The results for this section are split into two distinct categories: how the psychosocial responses are related psychologically, which includes cognitive appraisals and emotional responses, and how they are related behaviorally. Within these two categories, results are organized by more specific responses.

4.2.2.1 Psychological Changes

One of the psychological effects that a serious injury had on this group of student-athletes was a re-evaluation of academic goals. Sometimes, this meant a theoretical shift to focus more on academics in general, when for others it meant a more concrete change such as a change of major or new goal for their GPA.

For Manuel, academics had always been a priority in his life as much as soccer. Although his plans after graduation were more sport-centered, as he hopes to coach and play professional soccer, he always “valued education,” and had switched into his

school's honors program in January 2017. For him, his injury was a reminder that it is always good to have his education as a backup plan, in case future injuries interfere with his athletic goals: "You don't know if [you'll be back] in six months or never be back. You never know, and yet it might be okay as well." As a result, his academic motivation increased, as he explained it, from a 9/10 before his injury, to a 9.5/10 after: "it increased a little bit but not as much because the motivation was already there before."

Other participants had academic goals that involved getting back to where they were before their injury. Angela, a swimmer who suffered a labrum tear in her hip, had such a reaction: "I'm definitely a lot more academically motivated, […] 'cause now I see how much like it affected me in the fall semester. […] Now I'm working super hard, to get my grades like even higher than they are now, and especially what they were in the fall."

Another student-athlete with a similar reaction was Melissa: "Last semester my GPA went from like above a 3.0, to, like, a 2.91 […] and, um, I would say that definitely part of the injury too, I don't want to blame in on that but, like, I know, like, it was distracting." As a result, Melissa's new academic goal became getting her GPA back up above a 3.0 again.

One of the student-athletes who had the biggest change in academic goals post injury was Lauren, who had to take a medical leave of absence as a result of her injury. Her experience had such an effect on her that she changed her major from film to sport and recreation management, because she "wanted to be able to help people as much as people have helped me." Here, she explains this shift in her intentions:

> So my overall goal is to become a collegiate rowing coach but if I can't do that then I'm going to, I just wanna work with athletes. Like, I wanna be in the sport

> business. But, um, yeah I was very much into art, I still am. But after the injury then I realized that like, this is what I wanna do.

Luckily, this shift seemed to have been a positive change for Lauren: "I think the change of major really helps 'cause I love all my classes and I actually, like, there's some I actually, genuinely enjoy going to and not just like, 'Oh my God, I have to go to class.'"

Unfortunately, not all goal adjustments as a result of injury were as positive. Carlos, for example, sprained his ankle in the fall of 2014. While a sprained ankle itself is not always a serious injury, he suffered complications from this injury in the form of scar tissue, and eventually blood clots in his legs and lungs that affected him for years after. For him, a goal adjustment came in the form of being realistic about his capabilities. Before finding out he had blood clots, Carlos had what he described as "pretty hefty goals" for his academics. His doctor, however, had a more realistic approach: "The hematologist was like telling me that, uh, my lung capacity and oxygen levels and what not would never be like the same. He even told me like, 'Okay, you're not gonna be 100 percent. You should probably reevaluate your goals.'"

Another way that the student-athletes' injuries affected them was emotionally, and these emotional responses sometimes interfered with academics as well. When I asked Angela if the emotional effects of her injury ever affected her schoolwork, she replied: "Definitely. I was, um, just feeling so like down […] I just like wouldn't feel like doing any studying. Even if I had like a test the next day, I would just quickly go over my notes and just say like, 'Oh, that's good enough.'" Specifically, when her injury first occurred, Angela says she was so "sad" and "frustrated" over the whole experience that she "mentally checked out" from her schoolwork. Even if she was physically in class she

was always in pain, or thinking about how much pain she was in, which made her "not want to do any work and just rest."

Amanda also experienced what she called a mental block. In the week following surgery she felt particularly overwhelmed. As she described it, she was "in pain" and felt like she couldn't "do anything". Small things like being on crutches and not being able to carry anything had her so emotionally frustrated that she felt like she couldn't focus on her schoolwork. In her own words, she explained that "the small things like that, that were just annoyances, kinda just got me mentally blocked for some reason, and then I couldn't, I just wouldn't be able to focus because I'd be, like, frustrated about not being able to do normal things."

The emotional effects of Melissa's injury led her to feel overwhelmed as well. Particularly during finals week, she "felt like she had a lot on [her] back," because during this time she was just starting to figure out what her injury was. In general, she describes that semester as an extremely sensitive period: "I was, like, very much emotional, more than I've ever been in my life. Like, I can't remember the last time I was that emotional. I just cried more in the past three months than I ever have." She says what was really hard was "trying to balance everything," including her injury, her schoolwork, as well as the fact that she lost her job as a result of her injury, which made the experience even more stressful as there was "no money coming in" on top of everything else.

For Manuel, the frustration over having to get around using a scooter caused him to have trouble focusing as well. Because his injury caused him to be non-weight bearing for a period of time, he had to use a scooter to travel everywhere, including from class to class. Unfortunately, this method of travel didn't always go smoothly: "sometimes I'd

just like fall off of it and what no, so. […] I'd be going on my way to class and then I'm already in a bad mood from falling, and I'm late, […] and then I just wouldn't be able to focus."

Lacrosse player Caroline, who had a history of anxiety and depression before her sport injury, had to battle her mental illness in addition to the emotional effects of her injury. When asked about how the emotional effects related to her schoolwork, she gave the following response:

> So what happens if when you first get injured, everyone, including myself, is like hyper aware of it. So, people are like, really like, 'Oh, my god. Are you OK?' And, like, people like, really care, you know, or, at least, they pretend to care and you're like flooded with like niceness and attention, and you're like getting through it and you're like totally gonna make it. And then, you hit that like, two month point, where like, you're over the self-talk and everyone else has kind of become desensitized to this like hip to ankle brace that you're wearing. And so, there's definitely a time where I was just like still doing so much rehab and still just really kind of in the sludge of tearing your ACL, but didn't have this like great network of people supporting me as much anymore. It's not their fault. I mean, I feel like that happens with any bad thing in life. Um, people really recognize it at first but then, after time goes on, people forget. And, so once my network and myself had kinda stopped caring, um, it definitely got really hard for me, emotionally. And anytime my depression goes up, my schoolwork goes down. It's just hard to be motivated when you're like, you know, kind of sleeping all of the time and just doing these like, depressed tendencies.

In this case, social support was a main factor in Caroline's emotional state post injury, and once the novelty of her injury wore off and she was getting less daily support from her team, her depression started to creep in and affect her greatly emotionally. This, in turn, made it more difficult for her to focus on her academic responsibilities.

Amanda also had a strong emotional reaction to the stress of trying to keep up with both school and lacrosse while also dealing with her injury: "It's been very stressful. I, um, I actually didn't miss that much class, but being away for the time I did and then coming back was just, incredibly overwhelming." Because she only missed a week of

classes, Amanda wasn't expecting coming back to be that difficult, but found that "getting back into the swing of things" was harder than she anticipated, as some of her classes "cover so much in each lecture." What was particularly worrisome to her was that her recovery may get harder the further she went along:

> I'm a bit worried that I'm, like, hanging by a thread right now and I'm not even going to practice. Like what happens next year when I have to you know...Like I forget what it's like in the fall, going to practice, having to keep up with schoolwork [...] I'm thinking about all the work that I still have and I don't need to go to practice. It's very overwhelming and stressful.

Even without having to attend team practices, Amanda felt it was incredibly difficult to balance her academic responsibilities while trying to physically recover from her injury, and worried that this would only get worse once her coach wanted her back at practice again.

While some student-athletes may be more prone to intense emotional reactions, not everyone has these same reactions. For example, Adam, on the other hand, said that the emotional effects of his injury didn't have any effect on his schoolwork. He explained that he doesn't "let his emotions become too good or too bad," and tries to remain "as levelheaded as possible" even in the face of an adversity such as a serious injury. Obviously, not all student-athletes have that ability, as seen in the above examples.

4.2.2.2 Behavioral Changes

There were many behavioral coping skills used by these student-athletes in attempt to stay on top of their schoolwork. It seems that more than anything, the biggest issue was time, and changes to daily schedules caused shifts in the way they worked.

Lauren had the self-awareness to know that after attending rowing practice, she would prefer to "deal with recovery rather than homework." In order to stay on top of her

schoolwork, she made sure to finish whatever homework she had during the day before practice, so she wouldn't have to come back afterwards and feel like there were "a million and two things to worry about." While her grades that semester "didn't necessarily suffer," she had to learn to "use time management a lot more," and worked really hard to get the results that she did.

Similarly, Caroline shifted her daily routine in order to deal with her injury and her obligations. Like Lauren, she didn't want to do her homework at night, because she knew she would be "exhausted for like two months after" having her ACL surgery, because even simple tasks like lifting her leg up became "the most tiring thing in the world." Before her injury, she was the type of student who typically did her homework from midnight-2am, what she referred to as her "golden hours of work." This routine, however, was no longer working for her post-surgery: "All of a sudden I'm like asleep at like 10:30 every night. And I was kinda like, 'Shit.'" In response, she had to "be realistic" with herself and change the way she typically worked, using better time management skills and finishing work before she was completely exhausted by the end of the day.

Lisa made a behavioral change by attempting to work on both her injury and her academics at the same time, although it was short lived. Her physical therapist wanted her to do rehabilitation exercises during her classes, which she admits she did for one day, but then realized it was "stupid" and didn't continue to do so.

When Angela suffered a labrum tear in her hip in September 2016, some behavioral changes occurred that made it difficult to maintain her pre-injury levels of academics. She had trouble focusing in her classes and on her work, and while she still completed her assignments, she "wouldn't do it whole heartedly." Additionally, she

"wouldn't study as much in the library" as she previously had. By the time I spoke to her in March 2017, she had a new goal of getting her grades back to where they were the previous semester, and had made the behavioral change of simply putting more time into her academics: "I am putting three more hours into schoolwork per day to try to make sure that I'm constantly like on top of my game."

Not all participants made behavioral changes, however. Although Lisa had to "hop to classes on crutches," overall her injury didn't have much of an effect on her academic commitments: "At first I was like a little concerned about schoolwork, but, uh, it didn't turn out to be a problem."

While in most cases an injury meant less free time for the student-athletes, as they were expected to keep up their academic work, still attend team practices and games, and complete their physical rehabilitation, there some instances where they did have breaks from their athletic commitments because of their injury. Behaviorally, it was important for the student-athletes to take advantage of these opportunities.

For example, Manuel was unable to travel with his team to a game in Texas one weekend, which allowed him to spend that time working on schoolwork. When Carlos had surgery, he was in an academic semester that was especially challenging, and had to miss some classes because of his injury. He knew that because of his tough course-load, he had to be "very serious about the academics," and realized that he should take advantage of what he could do: "So the injury kind of [made me realize] okay, I'm not moving so I'm just gonna devote my time to studying and what not."

Michael made some behavioral changes as well and took advantage of the extra time he had while injured and not a "full-time athlete." Because of the nature of his

injury, a stress reaction, he didn't go to team practices and also couldn't compete. He decided to use that time to focus on academics, something he thinks not all student-athletes might do in the same situation: "I think a lot of, a lot of athletes probably like they realize time that is just kinda like free time like take advantage of it and go out a drink a lot more." He thinks that the extra free time can cause some to "get sidetracked," but Michael was able to "stay disciplined." Specifically, he "learned how to take classes effectively," by "tak[ing] advantage of office hours and stuff like that," and developed new study habits that he hopes to continue using in his senior year.

The timing of Melissa's injury meant that she was left with a lot of free time over her winter break. She was non-weight bearing so she couldn't do any training for rowing, and also lost her job as a waitress as a result of the injury. Instead of simply relaxing during this break, she decided to take advantage of the time she had to get ahead for the upcoming semester, and work on skills she would need as a Film and Media arts major:

> I told myself, I can't work anymore and I can't train […] I'll have a lot of time at home and I have like, no school going on, so I'd just focus more on filming. I have two projects I worked on. So I guess, that definitely did help me in a sense [and] it resulted in doing my art. Um, and I guess that also prepared me for this semester because I'm in harder classes.

By using the free time she had over winter break, Melissa was able to get ahead before starting a new semester, and felt more confident once she started back up at school again.

Organization was another tactic that became important for student-athletes to stay on top of their schedules once they now also had to include physical therapy on top of their other obligations. For Angela, this meant keeping track of small goals and tasks that she wanted to accomplish: "I'd kinda write out my goals, what I should do every single

day to make sure that I'm on top of all my work 'cause everything is gonna get done on time."

Amanda also used staying organized as a way to manage her responsibilities. She explained that she had always been a "neat freak" with her work, and loved to stay organized. Specifically, she used a planner to write down everything, and made sure when she was injured that she left plenty of time for academics: "I'm starting to study for this exam three weeks ahead of time, which is the most, like that I've ever started studying." While she initially used this technique to balance her injury and her academics, she found that starting to study ahead of time was a really useful tool in general, that allowed her to "really explore the information." She said she plans to continue using this studying technique for "the remainder of this year and the upcoming three years" while she's in college.

In some cases, student-athletes reached out and used social support from others to help them stay organized. Carlos said that after his surgery, he "had to rely on people a lot in classes" and just in general as well. After her surgery, Amanda had two anatomy exams she needed to study for, and was "super motivated" to do her best on, as it had been her hardest class of the semester. Her older sister, also a college lacrosse player, assisted her by making a study plan specifically for those two exams that she knew were important.

Melissa, on the other hand, got an academic mentor who helped her in a similar manner: "She gave me this chart, [to] lay out literally every minute of every day kind of thing. Not minutes but every half hour." This helped Melissa stay on top of all her obligations, and she enjoyed the visual aspect of the schedule as well. She even used it

for social purposes, as she explained she would "literally pull it out in the middle of class" and say to anyone that wanted to meet with her, "'I can squeeze you in.'" Although she "hates to be that person," this schedule made by an academic mentor became a huge help as she tried to stay on top of schoolwork, keep up with her academic engagements, and complete physical therapy.

Caroline, alternatively, went right to the source in regards to her academics, explaining that she "really had to be like BFFs" with all of her professors when she was injured. While she clarified that she didn't get extensions on her work or special treatment, because her school isn't necessarily "rah rah" on athletes, she did feel that she needed to remind them that she was injured. Part of this was because she had to miss classes for doctor's appointments, and she also wanted them to be "aware of [her] situation." While students might normally go to office hours if they missed class, this was something she "really didn't have time" to do. Talking to them made her feel better, as well as "a little bit more motivated," and she found that in general they were "super receptive" to her unique situation. In particular, professors "who either played a sport themselves, [or] had a kid or like a close relative who played a sport" were the most understanding.

4.2.3 Research Question 3

The final section of results explores research question three: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities? This question explores whether or not a serious injury shifts the way these student-athletes split their time and effort between these two obligations. For that reason, this section is also split into two parts in the same way research question

two is. Those two sections are: 1. Psychological Changes, which includes cognitive appraisals and emotional responses, specifically as they relate to any change in the way student-athletes prioritized or thought about the two, and 2. Behavioral Changes, or any change in their habits that occurred as a result of shifting focus from one responsibility to the other.

4.2.3.1 Psychological Changes

For some student-athletes, the experience of a serious injury caused a change in the way they thought about their academics. In the following examples, there was a shift in focus towards their schoolwork.

In Caroline's instance having a serious injury changed the way she thought about lacrosse: "I kinda was like, 'Okay this is the reality of things. You aren't going to be playing lacrosse for the rest of your life." Although she always was aware of this in the back of her mind, she said the injury "illuminated" this idea, that lacrosse was really just a "fleeting concept in [her] mind." This caused a cognitive change, and her "motivation [for] schoolwork actually went up." She realized that she needed to focus extra hard on school and getting a good internship, although she admits that this was practically difficult because "the time and energy for school got harder" as a result of her injury. She summed this up by saying that the "motivation went up even though like stupid barriers in my way also went up."

A break from running also caused Michael to feel more motivated towards his schoolwork during his injury, although somewhat reluctantly: "I feel like I want to say that [my motivation] didn't change, but because all of a sudden, like running wasn't an option anymore, […] then I was definitely more motivated for my schoolwork." He said

that this shift may have even been part of the reason that "it took so long" for him to get back into running. Although he wanted to be able to recover physically, the nature of his injury, a stress reaction, forced him to rest, and "all [he] had left was schoolwork."

Carlos, similarly, found that taking a break from swimming caused a motivational shift towards academics. When asked if his injury caused a change in the way he balanced his efforts, he responded: "I think it definitely moved, shifted it over to like focusing on school." The reason for this, as he explained, was simply because he wasn't able to move or swim at all. Even though he still had to sit at practices sometimes, because he was "unable to participate in the athletics," he started to focus more on his schoolwork.

Manuel also said that his injury "definitely changed [his] motivation to schoolwork." Although he was always a good student, his future goals revolved largely around athletics, as he hopes to play professionally abroad. The injury made him realize that "you never know" what can happen, and as a result, he started to do his schoolwork "with more concern, with a better concentration."

Two of the student-athletes interviewed, on the other hand, had the opposite reaction to their injury, and became more motivated towards recovering physically than shifting towards an academic focus.

Melissa, for example, said that before her injury, she was "obsessed with like, getting things done, having enough time to get work done," whereas afterwards, her "mindset" changed and she became more preoccupied with healing in order to get back to rowing. Although she felt bad about this, mentioning that she thought it was "bad to say," she also said, "I can't help how I feel." She expanded on this by saying: "I definitely wish

I had more time to work on my schoolwork right now because I don't but at the same time, my priority is so much invested in my sport […] My priorities are definitely more involved with rowing, just getting better."

Angela was also eager to get back to her sport, and found that she focused more on that for a while after being injured: "When my injury occurred I definitely was spending more time doing swimming even though I was really limited. […] And I just kinda like let that, uh, weigh a little bit more over academics." Once she had reached a certain point in her recovery, however, she tried to get everything back to an "even playing field." When I spoke to her she was towards the end of her physical rehabilitation, and had established more of a balance by that point than when she was first injured: "It's more equal now and so when I'm at school, I'm trying to put in like all my energy into swimming and then as soon as I am done with practice it's all into my academics."

Other student-athletes didn't feel a shift towards either academics or athletics as a result of their injuries. Lisa explained that she had "always been more motivated towards academics," and while she made new goals for herself to get back to swimming, that didn't change her devotion to her schoolwork.

Adam, alternatively, had a higher motivation pull towards his athletics, and this focus didn't change as a result of his injury either. He explained his motivation for both academics and running in the following excerpt:

> My motivation for running is always, it's always just higher 'cause I enjoy it more and I actually, I really love it. School is good and I know it's super important but it's hard to be as motivated for something and not be as interested. I know that in the long run, school is super important to like, it gives you steps to like, have a family and do all that stuff, so that's kinda what motivates me for school, but it's

> definitely not as strong as my motivation for running. And my mind on that hasn't changed since being injured.

While Adam realizes the importance of a good education, his love for running gives it a higher priority in his mind, and although he spent 4-6 weeks out of running due to tendonitis, it didn't change how he felt.

Lauren was another participant who also prioritized her athletics over school, and like Adam, an injury didn't change that for her. As she explained, "schoolwork was always second." When she had knee surgery, she missed two weeks of classes, but wasn't worried about the work she missed and would have to make up. She ended up having to medically withdraw that semester, in spring 2016, and even when that happened, she still "wasn't worried about school," instead focusing on her injury and getting back physically to where she was before.

4.2.3.2 Behavioral Changes

The most common behavioral change that occurred as a result of a change in the balance between academics and athletics was that injured student-athletes found themselves devoting more time to schoolwork while they were physically unable to participate in their sports.

Michael, for example, found that when he had a break from running due to a stress fracture he enjoyed the freedom that came with it, and spent more of his time working on academics than he normally would. While some athletes still have to attend practices throughout their injury, he was not expected to. He even attributed this change as a potential reason it took him as long as it did to return to running: "I put more time towards my schoolwork. I think that's definitely part of the reason why it took me so long to get back into running. It's because like, I realized how nice it is to have time to do your

schoolwork." While in his "heart of hearts" he wanted to get back to running, the practical benefit of having more time was "pretty cool."

Before Amanda had her injury, she was "spreading [her]self in a good way" between her academic and athletic commitments, and had a period of five months after her injury where that didn't change much. Once she finally had surgery, she "got set back a little bit," in terms of her academics, but was able to recover because like Michael, she wasn't expected to go to practice: "I've been putting a lot more energy into academics after my surgery, just because [...] I haven't been able to go to practices and spend those two, three hours a day there." This gave her "more time to really put work towards" what she needed to accomplish for school.

Adam also found that his schedule became " a lot more flexible" when he was injured. While his "passion for school [didn't] change much," he did notice that it was easier to get his work done and he had more energy when he wasn't "running like a million miles a day." Behaviorally, one change he made was in terms of how he organized his schedule. He did a lot of swimming as physical therapy for his tendonitis, but the pool where he did so wasn't open all day. As a result, he had to constantly check the hours and work it around his other responsibilities: "I would definitely check there and see if I had any tests or classes that were super important. I would try and schedule the pool around it, and schedule PT around it." Adam also admitted this wasn't always the way he had prioritized things: "I guess like before, when I'm running full speed, [...] I guess I try and schedule more around track. I scheduled for track more than academics, just because I thought it was a good time."

Lisa, like Adam, found that she had more energy while recovering from injury than in her typical daily life as a student-athlete. As a result, she was able to spend more time on school: “I would say I gave a lot more time to swimming than schoolwork normally, just ‘cause I’m like tired after swimming and I sleep a lot. With the injury, I wasn’t as tired as much so I was able to do more schoolwork.” A change in energy levels led to more time spent on schoolwork, which allowed Lisa to “focus more on school” during her injury.

Some of the student-athletes interviewed were still expected to attend team practices, but were able to utilize that time for academic purposes since they couldn’t physically participate. Lisa, in addition to having more energy for school after practice, was “able to study at practice sometimes,” which she said “helped a lot.” She also would bring her notes to physical therapy sometimes, and review material when she was able to. Angela also had to attend team practices during her injury recovery, which took up the same “20 hours a week” that it did when she was healthy. The difference, however, was in how she could use that time: “I would just like have to sit there and do homework. So it was like still a time commitment but I was able to get some stuff done.”

Not all student-athletes had a behavioral shift of devoting more time to academics. What everyone did experience, however, was a change in their schedule, as physical therapy became a new responsibility they didn’t have before experiencing a serious injury.

Michael explained that “scheduling issues” around his rehabilitation made his recovery particularly difficult. He had class every day from “9 to 5,” so it was difficult to find time for his doctors and physical therapists unless it was early in the morning, which

he wasn't particularly excited about: "You can imagine how frustrating is that to wake up at like 6am and go out into the dark."

Caroline found the additional time commitment of physical therapy to be one of the more challenging aspects of her injury experience, and expressed that people sometimes misunderstood that aspect of being injured:

> People would be like, 'Oh my God, like you can focus on school now,' which is some ways is true because you get to stay up later at night once you're a few months into it. But it's actually worse for school because the time commitment is awful.

She further explained that her schedule involved rehab an hour and a half before practice, followed by a three hour lacrosse practice, and then ice afterwards which took an additional 15 to 20 minutes. Lacrosse practice itself also seemed different to her all of a sudden: "Lacrosse practices that used to go by really fast, seem terribly long and you realize how much time you put into it." As a result, all the extra time she had to spend on recovery became "one of the worst parts of the injury."

A slightly different barrier to academics that some student-athletes faced as a result of injury was the annoyance of having to get around using crutches. Amanda found that one of the reasons it was hard for her to get "back into the swing of things" after surgery was for this reason. Navigating campus was particularly overwhelming for her because of her school's urban location, where everything is "quick and busy." Melissa was worried about navigating campus after her injury as well, and found that in order to get to class on time, she had to leave "a whole half hour earlier" than she normally would. As a film student, crutches also posed a unique challenge, as she was expected to film and would need to move around while holding a camera at the same time. Eventually, she had to make a decision between staying off her leg or being able to

complete her school work: “This one day, I remember spending the majority of the day off my crutches and just, walking in my boot with the camera.” Although she was supposed to be non-weight bearing at the time, she also had academic responsibilities she was expected to fulfil, and had to make a decision towards one or the other.

Because balancing an injury along with everything else can make student-athlete’s lives even more hectic, some student-athletes took steps to alleviate this. Lauren, for example, went to her coaches when she realized that trying to do well in school, rehabilitate her knee, and attend team activities was too much:

> When I first got hurt, I wasn’t going to every practice because I tried doing that and I told my coaches, ‘I cannot go to a three/four hour pactice, do the workout you want me to do, go to class and get my stuff done in a day, there’s just not enough time for that.’

Luckily, her coaches were understanding: “She literally laughed at me. She goes, ‘I didn’t expect you to be able to come to everything [...] don’t worry about it.’” Lauren still attended practices on Fridays and Saturdays, or on days when she could use a stationary bike and rehab alongside her team, but for “the bulk of the week” she didn’t go, which allowed her to stay on top of everything.

In addition, Lauren had also taken proactive steps before the semester even started. In the semester following her surgery, she purposefully “took a very light semester” because she knew she would have physical therapy, and wanted to give herself a chance to get “in the swing of things without being overwhelmed.” This decision, in addition to not having to attend all team practices, helped her stay on track with her schoolwork and recovery, and by the time I spoke with her, she felt she was a “normal athletic student” who was now “able to get things done.”

Caroline was another student-athlete who anticipated that having surgery might make schoolwork difficult. Although she tore her ACL in February, she waited until March to schedule surgery because she wanted to get through midterms first. She also strategically scheduled surgery over her spring break, so she wouldn't have to miss any classes and could have that full week to recover and not worry about school.

4.2.4 Advice to other Student-Athletes

Something I asked the student-athletes who participated in this study, which relates to Research Questions 2 and 3, was what advice they would give to other student-athletes who sustain serious injuries, in regards to staying on top of their schoolwork. These were their responses:

Manuel:

> My advice would definitely be to do as much as you can, to actually value your education, your schoolwork, that you do because it's gonna be important, no matter what.

Melissa:

> What you're going through is very hard...but try to shed some kind of, find something good in it and I would say that, yeah, it's rough not being on your field, doing your favorite thing, playing your sport [...] but see this as an opportunity for you to get better in the classroom [...] At least for me, they gave me a step back, such a big step back that I didn't have to do any training. It gave me a lot of time that I could invest more in my schoolwork. And I guess, if that happens [...] take advantage of that.

Lauren:

> Time management is key. So, like, really devote your time to, make a calendar if you have to. Like, write everything out. That's what I did. I still do that, like, you have to really focus on time management.

Lisa:

> I know the injury might seem like your whole world, but it's gonna go away eventually, so don't be afraid to put schoolwork above it at times.

Angela:

> Don't give up on it. And if you are out for your season then you should put all of your time into your schoolwork [...] There's still gonna be time to be able to go to your sports but definitely, you're not gonna get tired from it 'cause you're not gonna be working out, so I definitely think to take advantage of that extra energy you're gonna have to really apply as much as you can into your schoolwork." She also added, "I think it's like good if schools have a support staff. Talk to people who are there to support you, like the sport psychologist people. I definitely wish that...I don't even know if we have one of those, but if we did, I would definitely think to use it.

Carlos:

> I think definitely staying organized and, yeah, relying on people that are in your classes to get you those notes and [...] relying more on the support group and yeah, staying positive, like I was saying.

Caroline:

> Time management. And I would say, don't be too hard on yourself, as in like, recognize that you are injured and you're not cured after a month. Like, even if they take off your brace and they take off whatever you have or you're not on crutches anymore, like you're still dealing with that...so, if you need to like skip one more class. Or like sleep in one day to reach a point mentally, it's cool. Don't worry about it. And, just time all of your assignments ahead of time, if not three weeks ahead of time.

Adam:

> If you're not able to participate in activities [...] don't just waste that time. Really use that time to, uh, whether it's catch up on schoolwork that you weren't able to do or boost how well you're doing in school because, eventually, when you get back into it, academics just become harder.

Michael:

> Take advantage of the time that you're given, as much as possible, while continuing to do all the little things that are necessary to get you back on track as soon as possible. Be on top of scheduling, I guess, is the one thing that I would have done differently.

Amanda:

> My first piece of advice would just be to take a deep breath and sit down, you know, for a little and just kind of lay everything out on the table and just get

> yourself organized. That's what I did. I mean, I literally just sat in my room and got each one of my classes' schedules out and just kinda put it in my planner. I mean, take time to yourself for the first few weeks being back, whether you have surgery, or if your mind is just going crazy just 'cause of your injury [...] just to take a deep breath, take a step back, and lay everything out, and get organized. Make it manageable. Don't try and, like, stuff 14 things to do in one day. [...] Um, but definitely just, you know, relaxing first. You just have to relax instead of jumping right into it.

4.3 Type T Risk Taking Survey

The Type T Risk Taking Survey (Farley, 2016) was used to analyze the extent to which participants consider themselves to be individuals who engage in risk taking behaviors. This falls in accordance with the category, "risk taking behaviors," which is one of the potential behavioral responses to injury as listed by Wiese-Bjornstal et al. (1998). These surveys were scored numerically. The lowest possible score was an 8, which qualifies as a "small T," or a person who doesn't identify as a risk taker. The highest possible score was a 32, or a "big T," which is someone who does identify as a risk taker.

The 10 student-athletes who completed the survey fell somewhere between these two scores. Their scores were as follows: Manuel 21, Melissa 28, Lauren 19, Lisa 20, Angela 27, Carlos 28, Caroline 20, Adam 18, Michael 25, and Amanda 18. Within the possible scores, 8 being the smallest and 32 being the highest, 20 is the mid-point. Two participants, Lisa and Caroline, got exactly that score, meaning they neither identify as a risk taker or a non-risk taker according to the survey. Among the other participants, five scored above 20, and three fell below this halfway point.

Within the actual interview data, there were only three instances of risk taking mentioned as behavioral responses by the participants. One of these was from Lauren, who scored a 19 on the survey, putting her right below the median score of 20. Although

she didn't score on the higher end of the risk taking scale, she engaged in a risk taking behavior as part of her behavioral response to her injury. Specifically, she believed she was capable of rehabbing through her injury without surgery, even though her doctors told her there was a "99.9% chance" she would need it. It is possible that Lauren didn't score higher on the survey, because her definition of what would be considered "risky behaviors" has a higher baseline than those who don't compete in Division I athletics. As mentioned in the literature review, student-athletes exist in a bubble that can be a "culture of risk," where injuries are common and playing through injuries is considered normal and can even be glorified (Nixon, 1994, p. 341).

The other athletes who mentioned risk taking as part of their behavioral response to injury were Carlos and Michael, who both scored on the higher end of the Type T Risk Taking Survey. Carlos scored a 28 out of a possible 32 points, which tied one other participant as the highest recorded score out of these 10 student-athletes. How risk taking was involved in his injury response, was that he had to cut out any risk taking whatsoever from his daily activities, as a result of being on blood thinners to treat his blood clots.

The final mention was from Michael, who scored a 25 on the survey. Michael typically found excitement through his sport, but when he suffered a stress reaction that meant he couldn't run for 3-4 months, was able to find a new source that provided a similar feeling. He explained that when he was injured, "all of a sudden" he was able to get the "same rush" from academics that typically came from running. For him, the risk came from investing his time into something and then being tested on it. While he usually chased the thrill of achievement in running, while he was physically unable to do so he was able to transfer that energy into his schoolwork.

In future research, it would be beneficial to explore risk taking in student-athletes even further. Participating in sports at the college level is inherently risky and student-athletes are said to exist in a "culture of risk" where injuries are common and playing through them is often glorified (Nixon, 1994, p. 341). Because of this, it's worth exploring how student-athletes perceive their own risk taking status, and how this plays into their injury recovery. For example, if student-athletes consider themselves as risk takers, will they be more mentally prepared for an injury because they recognize the possibility of this happening, versus an athlete who doesn't think about or consider the physical risks of their sport? Little is currently known about how the variable of risk taking relates to the injury recovery process.

CHAPTER 5

DISCUSSION

5.1 Summary of Results

The purpose of this dissertation was to combine two areas of the current literature on student-athletes: their conflicting athletic and academic commitments, and the injury recovery process. While research had previously explored the different ways student-athletes are negatively affected by injuries, little was known about how these responses were related to student-athletes' academic commitments, or their ability to balance their schoolwork along with their sport. The aim of this research was to start a conversation regarding how the injury recovery process relates to this other aspect of student-athlete's lives. With Wiese-Bjornstal et al.'s (1998) integrated model of response to sport injury as the theoretical framework, and through a qualitative research design, this study aimed to explore the following research questions:

R1: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience in response to a serious injury?

R2: How are these psychosocial responses related to a student-athlete's academic life (psychologically and behaviorally)?

R3: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities (psychologically and behaviorally)?

The results will be discussed in this section as they pertain to each of these research questions, followed by an overall concluding statement. Practical implications of these findings will then be explored, as well as limitations of the study, and directions for future research.

5.1.1 Research Question 1

The first section of results addressed R1: What are some of the psychosocial responses (cognitive appraisals, emotional and behavioral responses) student-athletes experience as a result of a serious injury? These findings were meaningful, in that they supported the use of Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998) as a theoretical model through which to analyze and organize student-athletes' experiences with serious injuries. Of the 19 responses listed in the model—six under cognitive appraisals, six under emotional responses, and seven under behavioral responses—18 were observed in at least one of the 10 participants. The only response that was not found in the data was "malingering," which falls under behavioral responses.

No instances of malingering, the act of exaggerating a physical or psychological problem in order to avoid work, were recorded in the data. There are several reasons this may have occurred. First, it is possible that the student-athletes never did exaggerate their injuries or the effects they had. Alternatively, there may have been times that the student-athletes exaggerated their symptoms on a particular day or during the interview, but I was unaware that this was an exaggeration and took their responses to be true accounts of their injury experience. While a coach, teammate, or athletic trainer may have been aware of any instances of malingering, I did not find any examples within the interview data.

Otherwise, as mentioned, the athletes' responses to their serious injuries were in line with Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998). While all of the cognitive appraisals, emotional responses, and behavioral responses within this model were evident, some were particularly strong.

Under cognitive appraisals, there were three responses that were experienced by all 10 of the participants: goal adjustment, sense of loss or relief, and cognitive coping. It makes sense that student-athletes who experience serious injuries would all go through a goal adjustment of some kind, as they have to put their preinjury goals on pause and focus on a new goal: recovery. In terms of sense of loss or relief, what all participants experienced was a sense of loss due to their injuries, not a sense of relief. Specifically, they felt they were missing quality time spent with their teammates, as well as simply playing the sport they loved while they were physically unable to do so. All 10 participants also used cognitive coping skills of some sort to help them stay focused on their recovery. This motivation often came from small achievements in physical therapy that helped the athletes stay positive throughout the process.

Within the possible emotional responses listed by Wiese-Bjorntal et al. (1998), the most prominent within this group of athletes were fear of unknown, frustration/boredom, and positive attitude or outlook, all of which were experienced by nine of the 10 participants. Some student-athletes experienced a fear of the unknown because it took some time for their injuries to be accurately diagnosed. For others, a fear of not being the same athlete post-injury was another worry, along with staying injury free in the future. Frustration and boredom were other common responses, as these participants had serious injuries, all of which lasted over 21 days, and often came with daily pain and physical rehabilitation. Somewhat surprisingly, despite the many negative effects of their injuries, almost all of the participants were able to find some positive aspect of their injury experience. Many found it gave them a new appreciation for their

sport, while for others it provided them with a newfound perspective and belief in their own resilience.

In the final category, behavioral responses, adherence to rehabilitation and use/disuse of social support were the strongest responses, as all 10 participants used these strategies. Adherence to rehabilitation was a behavioral tool that was necessary for the recovery of the student-athletes, and if they wanted to continue playing their sport as these participants did, was not optional. Those who did their rehabilitation at the athletic training rooms within their universities had to work with their athletic trainer to schedule days/times for rehab that fit their academic schedules, while those who went to outside facilities or in the case of one participant who did hers at home, were more on their own in these regards. In either case, before an athlete can participate in athletics again, all have to go through their school's athletic training staff and be given clearance to do so, so adherence to rehabilitation was a necessary part of the recovery process.

Use/disuse of social support was the other behavioral response utilized by all 10 participants. In this case, it was a use, not a disuse of social support, as everyone reached out to someone for support, whether that was their family, friends, teammates, physical therapists, coaches, or psychologists. While not everyone used the same source, luckily all of the student-athletes interviewed were able to use social support as a part of their recovery. This relates to similar findings of the use of social support as a coping mechanism for an injury, as mentioned by Clement et al. (2015), Gottlieb (1983), Green & Weinberg (2001), Hardy, Richman, and Rosenfeld (1991), Pearson (1986), Petrie (1993), Pilisuk and Froland (1978), Smith and Smoll (1991), and Smith, Smoll, and Ptack (1990).

5.1.2 Research Question 2

The second section of results explored R2: How are these psychosocial responses related to a student-athlete's academic life (psychologically and behaviorally)? In this case, all 10 participants had psychosocial effects of their injuries that were related to their academics in some way. These resulted in both psychological and behavioral changes as a result.

Psychologically, the effects of serious injuries caused these student-athletes to experience academic goal adjustments, similarly to how many of the participants adjusted their athletic goals as well. Some participants had to let go of lofty academic goals while they recovered from their injury, some became more focused on academics, and one participant even changed her academic major as a result of her injury.

The emotional effects of their injuries also psychologically affected these student-athletes. For example, sadness and frustration from their injuries sometimes made it difficult for the participants to focus on their schoolwork. Others felt that having to deal with their injury and their schoolwork at the same time was incredibly stressful, and caused them to feel overwhelmed. This echoes the category of Conflicting Commitments within the pilot study, in which student-athletes struggled to emotionally deal with the pressure of all their obligations. Previous research has also pointed out the difficulty that student-athletes face in balancing their sport and their schoolwork (Harrison, Stone, Shapiro, Yee, Boyd, & Rullan, 2009; Jayakumar & Comeaux 2016; Yopyk & Prentice, 2005).

The biggest behavioral change that occurred in terms of academics was a shift in time management. This was due to the fact that the student-athletes often experienced

changes to their daily routines as a result of their physical rehabilitation. A few participants, for example, had to make sure they finished their schoolwork earlier than they normally would have, because they knew they would be exhausted and unable to do so following physical therapy. Some of the participants, on the other hand, had more available time in their schedules, when they couldn't travel with the team, or weren't required to attend team practices. What was important in these cases, was to take advantage of that free time and put it towards their schoolwork.

An increase in organizational tactics was another behavioral change that occurred, as student-athletes that could previously stay on top of their commitments needed some extra help with the addition of physical therapy in their lives. Finally, the last behavioral change that came up in the data was a use of social support, specifically for aid in academics. Some of the participants relied on their classmates, while others reached out to academic mentors or their college professors. In order to succeed in school while also recovering physically, these were some of the behavioral changes made by these student-athletes.

5.1.3 Research Question 3

The final section of results focused on the third and final research question: How are these psychosocial responses related to the balance between a student-athlete's athletic and academic responsibilities (psychologically and behaviorally)? What was found through data analysis was that many of the participating student-athletes experienced changes in the way they split their time and energy between these two commitments, both psychologically in terms of which of the two they prioritized, as well as behaviorally in terms of changes in routines.

A majority of study participants found that there was a shift in their priorities as a result of their serious injury. Five of the 10 participants stated that they became more motivated towards their schoolwork while they were injured, while two participants stated that their focus turned more to their physical recovery and school became a secondary obligation. The remaining three participants, however, found that their priorities didn't necessarily change once they became injured. Two had always focused more on athletics and continued to do so, and one participant valued her academics more than sports and this didn't change for her either. To summarize, there wasn't one clear way that a serious injury influenced the priorities of these student-athletes, however seven of the ten participants felt that their priorities shifted in one way or another.

Behaviorally, a few changes occurred among the participants that swayed the balance between their academics and athletics. While some student-athletes had less overall time in their schedules while injured, others found they had more free time and were able to put this towards their schoolwork. Some participants, for example, weren't expected to attend all practices, or were allowed to complete schoolwork while physically sitting at practice, and were able to put this time to good use. On the other hand, a few of the participants had to spend less time on their schoolwork then they normally would have preinjury, due to additional time commitments including physical therapy, or the extra time they needed to get around while using crutches.

The final behavioral change that was evident in the data included student-athletes taking active steps in order to maintain the balance that existed between their sport and their schoolwork. Some participants asked their coaches for permission to miss team

practices that were not essential for them to be at, while others scheduled surgery around important academic events, such as midterms.

5.1.4 Conclusion

One of the key aspects of Wiese-Bjornstal et al.'s integrated model of response to sport injury (1998) is the individualized nature of the experience. Some of the preinjury factors that determine an athlete's stress response include personality, history of stressors, coping resources, and interventions. Once an injury occurs, personal and situational factors determine the athlete's cognitive appraisal of the situation, which then affects their emotional and behavioral responses to the situation. Together, the athlete's cognitive appraisal, emotional and behavioral responses determine the recovery outcomes for the student-athlete (Wiese-Bjornstal et al., 1998). Because there are so many factors involved in sport injuries, no two athletes will ever have the exact same experience, even if they physically have the same injury.

What is evident in the data collected from this study is that this is true in terms of student-athletes' academic lives as well. Just as the effects of injury are unique to each person, the same appears to be true for how these effects are then related to academics, as well as the balance between athletic and academic commitments. A student's academic life, similarly to their athletic journey, is complex and different for each person, so it will likely be affected differently in the occurrence of a serious injury.

What was true for all ten participants was that their injury experience was related in some way to their academic life, as well as the balance between their sport and schoolwork. In this study, there wasn't anyone who had experienced a serious injury and then found that it had absolutely no effect on their academics, either psychologically or

behaviorally. It appears that the effects of serious injuries are related to student-athletes' academic lives, and most importantly this study shows that this previously unexplored topic is worth studying further.

5.2 Practical Implications

On a practical note, I hope this study shines a light on the idea that recovering from a serious injury can have implications for student-athletes that go beyond the playing field. If the players themselves, as well as their coaches, athletic training staff, parents, and teammates are aware of the potential for a serious injury to have effects that bridge into other areas of the student-athlete's life, they can pay closer attention to these details, and be more prepared to help the student-athlete if they begin to falter.

Because the injury experience itself, as well as a student-athlete's academic life are both complex and different for each person, it is likely that individual approaches will need to be developed based on each specific person and their needs. Some colleges and universities offer academic and other types of support to their student-athletes in the form of tutoring as well as access to academic advisors and sport psychologists ("How we Support College Athletes," 2017). A simple way to help a student-athlete struggling with the effects of a serious injury would be to check in with them and make sure that they are both aware of and taking advantage of these resources if they exist at their school. On the other hand, some student-athletes with a serious injury may not have academic or other difficulties that occur as a result. The only way for a coach, athletic trainer, or teammate to know, however, is if they ask these student-athletes not only about their physical recovery, but about the other aspects of their life that may be affected as well, including socially, emotionally, and academically.

5.3 Limitations

One of the limitations in this study comes from the participants who were sampled, in that it doesn't cover the whole picture of Division I athletics within the NCAA. For example, one group that was not sampled were student-athletes from traditionally revenue producing sports, such as football or basketball. As mentioned in the literature review, these athletes, specifically football and men's basketball players, often have a higher likelihood of going professional than those in other sports, and are more likely to lack academic motivation (Simons et al., 1997; 1999). Even though the percentage of student-athletes within these sports to actually go professional are very small (1.1% for men's basketball, and 1.5% for football), they still represent a unique portion of student-athletes, which I was unfortunately unable to recruit for this study ("Estimated Probability," 2017). It is possible that cognitive appraisals of serious injuries would have been different for student-athletes among this sub-population and could have provided another lens to the injury experience.

There were other limitations in the diversity of the sample as well. Racially, the 10 participants sampled for this study were not as diverse as they could have been. When asked for their ethnicity, seven participants identified as "White," two identified as "Hispanic," and one international student identified as "German," which puts him in the NCAA's "Nonresident Alien" category for race and ethnicity (NCAA, 2010). While the most recent NCAA estimates are that 70.4 percent of male athletes are white, and 77.2 percent of female athletes are white, the next largest category is black student-athletes, with 18.7 percent for male student-athletes, and 11.6 percent for female student-athletes (NCAA, 2010). In order to gain a more accurate picture of student-athlete experiences,

further research should include black athletes as well, as this is the second largest ethnic group within the NCAA by a large margin.

Finally, this study also lacked diversity in terms of participant grade point average (GPA). The NCAA has a "2.3 or Take a Knee" policy for college athletes, meaning they must maintain a minimum 2.3 GPA in core college courses in order to compete ("2.3 or Take a Knee," 2017). Of the 10 participants sampled for this study, none were anywhere close to being in jeopardy of athletic eligibility. Only one participant in this study had a 2.9 GPA, still well above the required minimum, and the rest of the participants had a 3.2 or above. Again, to gain a better understanding of all student-athletes, those with GPAs closer to the NCAAs minimum eligibility requirement should be sampled, as they may have a different experience with serious injuries in relation to their academics.

Another limitation of this study is that certain types of triangulation were not utilized. Triangulation, as defined by Carter, Bryant-Lukosius, DiCenso, Blythe, and Neville (2014) is "the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena" (p.545). Types of triangulation include method, investigator, theory, and data. While method triangulation was used to study student-athletes' injury experiences through the ethnographic pilot study as well as the in-depth semi-structured interviews, this study lacks the other forms of triangulation. Investigator triangulation, or the use of more than one researcher, was not used as dissertations are solo projects. Theory triangulation was also not used, as this study was based in Wiese-Bjornstal et al.'s (1998) integrated model of response to sport injury. The final type, data source triangulation is the collection of data from different types of people to gain multiple perspectives (Cartel et al., 2014). Data source triangulation was

not carried out due to feasibility and access issues to other relevant persons, including coaches, parents, and athletic trainers of the student-athletes included in the study. This is a limitation in that additional perspectives could have added to the validity of the data.

The methods with which the in-depth semi-structured interviews were carried out may also be another limitation of the study. At first, I had planned on only interviewing student-athletes from one university, and conducting all of those interviews in person. However once a month had gone by and I was only able to recruit one participant, I requested modifications that would allow me to recruit from other universities. This modification made the recruitment process much easier and I was able to gather the remaining participants at a timelier rate; however, due to the distance of these universities, I was unable to conduct a majority of the interviews in person. In the end, the first three interviews were conducted in person; however, the remaining seven were conducted over the phone. It is likely that the experience of answering questions in an office setting while talking to someone in person was much different from answering questions over the phone, and could have affected the quality of answers I received in one way or another.

Another methodological limitation was in the amount of data that were used to answer each of the three research questions. The data that targeted the first research question came from the first 24 interview questions, which were used by Clement et al. (2015) in their study of the psychosocial responses during different phases of sport-injury rehabilitation. For research question 2, there was a smaller pool of data, which came from the interview questions 25-31, the "academic" section of the interview. For research question 3 the data came from an even smaller source, as only one research question, 26,

directly asked students about the balance between their academic and athletic commitments. While all three research questions were explored using the available data, a semi-structured in-depth interview with more questions related to research questions two and three might provide a more extensive look at the ways the psychosocial responses of serious injuries are related to the academic lives of student-athletes

Finally, as mentioned previously, I do not have an entirely unbiased lens in terms of experience with serious injuries as a Division I student-athlete. During my four years as a lacrosse player at American University, I suffered two torn ACLs in my right knee, and spent over a year in physical rehabilitation, unable to participate in my sport. As much as I tried to keep an unbiased lens in the collection and analysis of data, it is possible these experiences had some effect on the research findings.

5.4 Directions for Future Research

The results of this study suggest that the psychosocial effects of serious injuries are worth examining further in relation to the academic lives of student-athletes, as it seems evident that there is a connection between the two. This study took an exploratory approach, and started to bridge the gap between two areas of study within the current literature regarding student-athletes: their conflicting athletic and academic commitments, and the injury recovery process. As this was a relatively unexplored research topic prior to this study, there are a number of opportunities for future research.

Within the limitations section, a few ways to expand upon the diversity of this particular sample were noted. In future research, it would be beneficial to talk to a wider range of Division I athletes, specifically including athletes from traditional revenue sports such as basketball and football, as they may have a different experience with serious

injuries than non-revenue athletes. Additionally, student-athletes of a more diverse racial background should be included in future research. Of particular note in this study was an absence of black student-athletes, who make up the second most populous racial category within the NCAA behind white student-athletes. Finally, another way to gather a more diverse population in the future would be to include student-athletes with lower GPAs than those who participated in this study, specifically those closer to the NCAA's 2.3 minimum GPA for athletic eligibility. A larger scale, quantitative study on the same topic could potentially shed light on this topic in a different way as well, as different measures could be used such as changes in GPA that occur while a student-athlete recovers from a serious injury.

Overall, any additional research related to the psychosocial effects of serious injuries, and how they are related to the academic lives of student-athletes, would be beneficial. The NCAA term "student-athlete" implies that these athletes are students first, and athletes second, so it is of utmost importance to understand any ways that the athletic commitments of this population may relate to their academic lives.

Research for this project was conducted with the support of the NCAA.

Any opinions, findings and conclusions are those of the author(s) and do not necessarily reflect the views of the National Collegiate Athletic Association.

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Educational Psychology | College of Education | Temple University
Ritter Hall, Office 472 |1301 Cecil B. Moore Avenue | Philadelphia, PA 19122
Bernadette.Maher@temple.edu | Office: 215-204-6372 | Mobile: 215-932-5931

Dear Ms. Maher,

We are in receipt of your request to reproduce Figure 1. Integrated model of psychological response to the sport injury and rehabilitation process (p. 49) from the following article for use in your dissertation

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> An integrated model of response to sport injury: Psychological and sociological dynamics
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APPENDIX B

PERMISSION FOR INCLUSION OF COPYRIGHTED MATERIAL: INTERVIEW QUESTIONS BY CLEMENT ET AL. (2015)

The following is an exchange of emails between myself and Kevin Clear, editor for the *Journal of Athletic Training*. These emails serve as proof that permission was granted to use the requested material.

TEMPLE UNIVERSITY

Bernadette Maher <tue69839@temple.edu>

Permission Inquiry from PhD Candidate at Temple University

5 messages

Bernadette Maher <tue69839@temple.edu> Wed, May 17, 2017 at 10:58 AM
To: jat@slu.edu

Dear Permissions Coordinator,

My name is Bernadette Maher. I'm a PhD Candidate at Temple University in Educational Psychology. I am reaching out to you to request permission to use copyrighted material in an article from the *Journal of Athletic Training*.

Attached you will find a letter detailing my request, along with my CV to provide some more information about myself.

Please let me know if you have any questions or need additional information.

Thanks so much,
Bernadette

--
Bernadette Maher | PhD Candidate & Instructor of Record
Educational Psychology | College of Education | Temple University
Ritter Hall, Office 472 |1301 Cecil B. Moore Avenue | Philadelphia, PA 19122
Bernadette.Maher@temple.edu | Office: 215-204-6372 | Mobile: 215-932-5931

2 attachments

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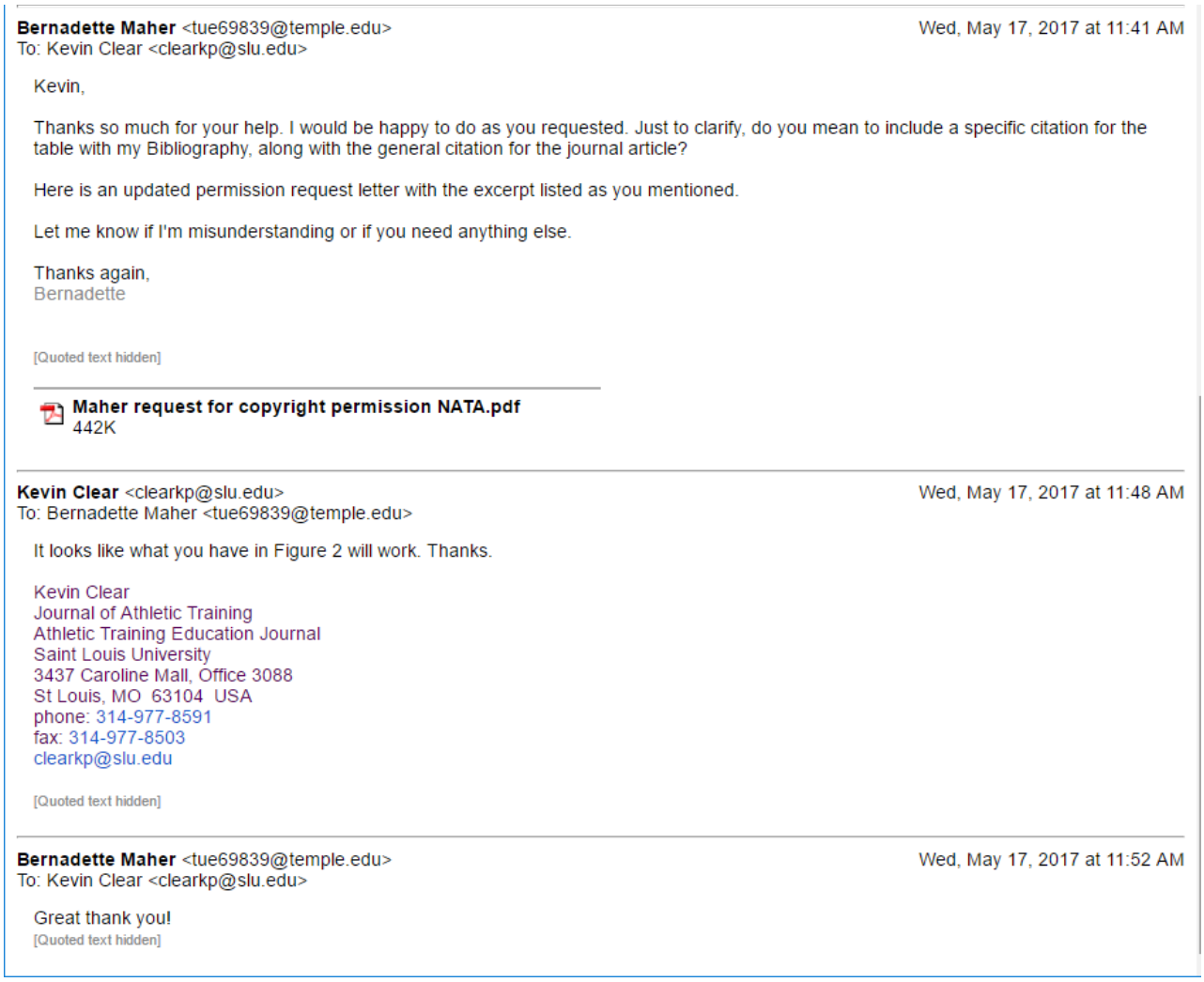
Kevin Clear <clearkp@slu.edu> Wed, May 17, 2017 at 11:28 AM
To: tue69839@temple.edu, Bernadette.Maher@temple.edu

Dear Ms. Bernadette Maher,

We are glad to grant you permission to use the Table on p. 97 of Clement D, Arvinen-Barrow M, Fetty T. Psychosocial responses during different phases of sport-injury rehabilitation: a qualitative study. *J Athl Train*. 2015;50(1):95-104, provided that you list the entire credit in a citation line.

Thanks,

Kevin Clear
Journal of Athletic Training
Athletic Training Education Journal
Saint Louis University
3437 Caroline Mall, Office 3088
St Louis, MO 63104 USA
phone: 314-977-8591
fax: 314-977-8503
clearkp@slu.edu



Bernadette Maher <tue69839@temple.edu> Wed, May 17, 2017 at 11:41 AM
To: Kevin Clear <clearkp@slu.edu>

Kevin,

Thanks so much for your help. I would be happy to do as you requested. Just to clarify, do you mean to include a specific citation for the table with my Bibliography, along with the general citation for the journal article?

Here is an updated permission request letter with the excerpt listed as you mentioned.

Let me know if I'm misunderstanding or if you need anything else.

Thanks again,
Bernadette

[Quoted text hidden]

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Kevin Clear <clearkp@slu.edu> Wed, May 17, 2017 at 11:48 AM
To: Bernadette Maher <tue69839@temple.edu>

It looks like what you have in Figure 2 will work. Thanks.

Kevin Clear
Journal of Athletic Training
Athletic Training Education Journal
Saint Louis University
3437 Caroline Mall, Office 3088
St Louis, MO 63104 USA
phone: 314-977-8591
fax: 314-977-8503
clearkp@slu.edu

[Quoted text hidden]

Bernadette Maher <tue69839@temple.edu> Wed, May 17, 2017 at 11:52 AM
To: Kevin Clear <clearkp@slu.edu>

Great thank you!
[Quoted text hidden]

Further, on the following page is the permission request letter that was sent. Although Kevin Clear did not sign the forms, he granted permission via email for use of the requested material:

Table on p. 97 of Clement D, Arvinen-Barrow M, Fetty T. Psychosocial responses during different phases of sport-injury rehabilitation: a qualitative study. *J Athl Train.* 2015;50(1):95-104.

Bernadette Maher
One Franklin Town Blvd Apt. 217
Philadelphia, PA 19103

May 17th, 2017

National Athletic Trainers' Association
1620 Valwood Parkway Suite 115
Carrollton, TX 75006

Dear Permissions Coordinator,

I am completing a doctoral dissertation at Temple University entitled "How the Psychosocial Effects of Serious Injuries are Related to the Academic Lives of Student-Athletes." I would like your permission to reprint in my dissertation excerpts from the following:

Clement, D., Arvinen-Barrow, M., & Fetty, T. (2015). Psychosocial responses during different phases of sport-injury rehabilitation: a qualitative study. *Journal of athletic training*, *50*(1), 95.

The excerpts to be reproduced are:
Table on p. 97 of Clement D, Arvinen-Barrow M, Fetty T. Psychosocial responses during different phases of sport-injury rehabilitation: a qualitative study. *J Athl Train.* 2015;50(1):95-104

How these interview questions will be shown in my dissertation can be seen on the following page. My study utilizes these as the first set of questions for in-depth semi-structured interviews, with additional questions following that regard the academic commitments of student-athletes.

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Sincerely,
Bernadette Maher

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Figure 2. First 24 Interview Questions. Reprinted from "Psychosocial Responses During Different Phases of Sport-Injury Rehabilitation: A Qualitative Study," by D. Clement, M. Arvinen-Barrow, and T. Fetty, 2015, *Journal of Athletic Training*, *50*(1), p. 97. Copyright 2015 by the National Athletic Trainers' Association, Inc.

Table. Interview Questions

Section A: Background

1. Could you tell me about yourself?
2. Could you tell me about your life before or around the time of your injury?
3. Could you tell me about the time when you got injured?

Section B: Cognitive and emotional responses

4. Describe your initial thoughts and emotions after sustaining your injury.
5. How did these thoughts and emotions change once you knew about the seriousness and impact of the injury?
6. Could you explain how your injury has affected you?
7. How do you feel you have coped with your injury?
8. How do you feel about your injury now?
9. In your own words, what has been the most challenging aspect of being injured?
10. Could you tell me how you did or how you are coping with that?

Section C: Behavioral responses

11. Can you tell me about specific methods or techniques you have used to cope with your injury?
12. When you got injured, who did you turn to for support?
13. Could you tell me about your experiences with that support?
14. Could you tell me about your rehab experience?
15. How did it progress?
16. What was the environment like?
17. Can you tell me anything specific that you feel has helped your recovery?
18. In a similar manner, can you tell me anything specific that you feel has hindered your recovery?

Section D: Readiness for return to play

19. Tell me about your goals (life and sport) since sustaining your injury.
20. What are your goals when you return to play?
21. How motivated are you to return to play?
22. What do you miss about participating in your sport?
23. What were/are your thoughts and feelings concerning return to play?
24. How can you use this experience in life and on the playing field?