

PSYCHOLOGICAL EFFECTS OF SPORT INJURY ON AN NCAA DIVISION I STUDENT
ATHLETE: A QUALITATIVE CASE STUDY

by
Kily C. Gilbert

A THESIS

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William Massey

Negative emotional states are common for injured athletes, yet a 2016 survey suggested that only 38.3% of NCAA institutions had a full or part-time mental health professional (Kroshus, 2016). In considering the lack of support for mental health conditions in NCAA institutions, and the mental and psychological issues that come with injury, there is a gap in the psychological treatment of injured student athlete. To date, the extant literature suggests that sport medicine professionals (SMPs) play a critical role in the psychology of injury recovery, yet lack formal training in psychological interventions (Clement et al., 2013). Moreover, research examining athlete and SMPs experiences of the psychological aspects of injury rehabilitation is largely limited to retrospective accounts (e.g., Clement et al., 2015; Tatsumi & Takenouchi, 2014). The purpose of the current study was to prospectively examine the psychological challenges of injury rehabilitation in an NCAA athlete. A qualitative case study grounded in narrative methodology, and an interpretive epistemology, was conducted (Smith, 2009). Research interviews were conducted with an injured athlete, the athlete's SMP, and a member of the athlete's social support team at baseline (i.e., post-injury and prior to the start of rehabilitation) and during the rehabilitation process before the sport-specific phase. Additionally, the athlete kept a journal to document the psychological and emotional struggles that took place during the rehabilitation process. Data analysis was iterative through each phase of the study and followed Polkinghorne's (1995) seven stages of narrative analysis. Results suggest that issues with identity are central to the injury-rehabilitation-return to play process. Notably, data suggest an ongoing struggle between the loss of identity in the present, the fear of identity loss in the future, and a desire to maintain a positive outlook on current circumstances, and ongoing tensions between cognitive appraisals and emotional reactions. The work of SMPs and sport psychology

professionals working with injured athletes seems to be highly linked to the cognitive appraisals and behavioral responses and emotional responses respectively. While cognitive appraisal and behavioral responses seem to be congruent, cognitive appraisals and emotional responses appear to lack this dynamic. Suggested in this case, psychological interventions (specifically support groups) seem to be helpful in working through emotional stresses that come up throughout the rehabilitation process.

Key Words: Sport injury, sport psychology, NCAA athlete, Wiese-Bjornstol integrated model, phases of rehabilitation

Corresponding e-mail address: gilberki@oregonstate.edu

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APPROVED:

William Massey, Mentor, representing Kinesiology

Marc Norcross, Committee Member, representing Kinesiology

Stacy Gnacinski, Committee Member, representing Health Sciences

Toni Doolen, Dean, Oregon State University Honors College

I understand that my project will become part of the permanent collection of Oregon State University, Honors College. My signature below authorizes release of my project to any reader upon request.

Kily Gilbert, Author

Introduction

Sports-related injuries occur frequently, resulting in lost playing time and a growing economic cost. In terms of prevalence, the overall injury rate (IR) in the NCAA is 5.92 per 1,000 athletic exposures (AEs; Hootman, 2007). Foot and ankle injuries make up 27% of injuries sustained annually in the NCAA, have an IR of 3.8 injuries per 1,000 AEs resulting in 12.3 days of missed playing time on average, and are often recurrent. (Hunt, Hurwit, Robell, Gatewood, Boster, & Matheson, 2017). Other injuries, such as hamstring strains (IR = 3.05 per 10,000 AE), high ankle sprains (IR = 1.0 per 1,000 AEs), quadriceps strains (IR = 1.07 per 10,000 AE) and stress fractures (IR = 5.7 per 100,000 AE), occur less frequently, yet can be more troublesome as time lost can range from three weeks to career ending (Dahabreh, Calori, Kanakaris, Nikolaou, & Giannoudis, 2009; Dalton, 2015; Eckard, Kerr, Padua, Djoko, & Dompier, 2017; Mauntel, Wikstrom, Roos, Djoko, Dompier, & Kerr, 2017). The cost of these injuries can also take a toll, ranging anywhere from \$495 to well over \$100,000 per injury when considering both treatment and rehabilitation (Dahabreh et al., 2009). While injuries take a large toll on athletes and the healthcare system, less studied yet equally important is the consideration of the psychological toll injuries take on athletes.

When injured, athletes exhibit higher levels of depression, lower self-esteem, negative emotional reactions and increased anxiety (Putukian, 2016). Injured athletes also exhibit decreased well-being, poor health-related quality of life, and increased fear avoidance beliefs compared to their non-injured counterparts (Houston, Hoch, Van Lunen, & Hoch, 2017). Negative emotional states are common for injured athletes, yet a 2016 survey suggested that only 38.3% of NCAA institutions had access to a full or part-time mental health professional, and only 39% of institutions had a written plan to identify mental health issues in athletes.

Furthermore, 31% of institutions did not screen for any of six mental health concerns (depression, anxiety, disordered eating, problematic alcohol use, illegal drug use, and prescription drug abuse), and only 19.5% screened for all six (Kroshus, 2016). In considering the lack of surveillance for mental health conditions in NCAA institutions, and the mental and psychological issues that come with injury, it seems that there is a gap in the psychological treatment of student athlete injuries. Each athletic department has staff members that ensure athletes are physically ready to return to play, but some lack staff that are equipped for helping athletes overcome psychological issues related to injury.

Arguably, when considering psychological risk factors associated with sport injury, sports medicine professional (SMPs) are on the frontline of evaluation and treatment. SMPs include: athletic trainers (ATs), physical therapists (PTs), physiotherapists, orthopedic surgeons, family physicians, pediatricians, internists, and other medical professionals that may be sought out to help with sport injury-related problems. SMPs have reported that it is important to address psychological responses to injury, yet many have reported feeling unprepared to use psychological strategies in the rehabilitation process (Arvinen-Barrow, Massey, & Hemmings, 2014; Clement, Granquist, & Arvinen-Barrow, 2013). Despite feeling unprepared, in one study 80% of SMPs reported having discussed emotional and behavioral responses to injury with their athletes. Furthermore, and highlighting the service gap mentioned above, most SMPs feel it is their job to help athletes with psychological problems occurring after injury, feel unprepared to use psychological interventions, and feel that they lack the ability to refer athletes to clinical and sport psychologists. Mann, Grana, Indelicato, O'Neill, and George (2007) reported that only 19% of SMPs surveyed felt there was an adequate number of sport and other types of clinical psychologists in their area. Similarly, Clement et al. (2013) reported that only 20.5% of athletic

trainers have access to sport psychology services and of those with access, 84% had referred athletes to these services (Clement et al., 2013). Thus, it appears that SMPs believe it is their job to address the psychological well-being of injured athletes, and are willing to refer athletes to such services when possible. However, given the combined findings of SMPs lacking training to address psychological responses to sport injury and a lack of sport psychology resources, there is a need to better understand how the interaction of an injured athlete and their SMP shape psychological aspects of injury rehabilitation.

In terms of psychological responses to sport injury, the integrated model of psychological response to sport injury and rehabilitation suggests a reciprocal and cyclical relationship between athletes' cognitive appraisals, emotional responses, and behavioral responses (Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998). Thus, to better understand psychological responses of sport injury, and ultimately psychological readiness to return to sport, cognitive appraisals, emotional responses, and behavioral responses, should all be considered. In terms of cognitive appraisals, some athletes report thoughts of worry about disappointing their team, as well as concerns about not meeting their goals or being able to return to pre-injury level of playing (Podlog, Heil, & Shulte, 2014). This is concerning as these thoughts could lead to feelings of social isolation, decreased health related quality of life, and slower recovery process due to fear of re-injury, and loss of motivation (Houston et al., 2017; Podlog & Eklund, 2006; Podlog et al., 2014). Emotional responses range from feelings of loss, denial, anger, frustration, depression, fear, confusion, worry, tension, sense of loss, relief, and excitement (Tracey, 2003). Since negative emotional responses can lead to decreased mental health in the form of depression or anxiety disorders, self-presentational concerns leading to lack in self-confidence, and decreased likeliness or prolonged return to sport, it is critical that emotional responses are also monitored throughout the

rehabilitation process (Arden, Taylor, Feller, Whitehead, & Webster, 2013; Podlog & Eklund, 2006; Podlog et al., 2014). In terms of behavioral responses, researchers have noted that the most adaptive responses include using psychological skills, using social networks, decreasing risk taking, and adhering to rehabilitation protocols (Walker, Thatcher, & Lavellee, 2007).

Combined, these psychological responses are essential, as injured athletes who return to play before being psychologically ready are often more tentative, feel less prepared, are distractible, and show restraint during sport performance (Brewer & Redmond, 2017). In a study done by Arden, Osterberg, Tagesson, Gauffin, Webster, and Kvist (2014), positive psychological responses were linked to increased psychological readiness and return to play at pre-injury level for competitive athletes. Importantly, when maladaptive, psychological processes can undermine injury rehabilitation and readiness for return to play, which is the goal for most athletes (Ivarsson, Tranaeus, Johnson, & Stenling, 2017).

Adherence to rehabilitation protocol is one of the most important components of the rehabilitation process, and has been linked to psychological responses to sport injury. Previous research has identified three stages of rehabilitation (reaction to injury, reaction to rehabilitation, and reaction to return to sport), that must be uniquely monitored as psychological processes that affect adherence may change throughout these stages (Clement, Arvinen-Barrow & Fetty, 2015). Across each stage, those with negative psychological responses often exhibit lower levels of adherence with and motivation toward the rehabilitation program (Rees, Mitchell, Evans, & Hardy, 2010). This becomes problematic as low rehabilitation adherence is known to impair physical activity, increase risk of secondary injury, and decrease likelihood of return to previous activity level (Podlog et al., 2014). Positive responses such as higher levels of motivation, pain tolerance, tough-mindedness, internal locus of control, self-efficacy and self-esteem have all

been positively linked to rehabilitation adherence (Podlog et al., 2014). Walker et al. (2007) also found that adherence is strongly linked to self-motivation and situational factors. Setbacks or slow progress in rehabilitation can worsen psychological responses such as motivation and self-confidence, which can lead to decreased rehabilitation adherence, and further deterioration of psychological responses.

Despite knowledge of athlete's responses to sport-injury, there remains limited understanding as to how SMPs can implement interventions to aide in the recovery process. For example, proactive coping skills such as short and long term goal-setting, imagery use, relaxation techniques, and stress inoculation therapy have been reported as possible strategies in the literature (Podlog et al., 2014), with researchers suggesting these strategies may lead to a faster recovery through neurochemical or physiologic changes (i.e. increased blood flow, enhanced muscular strength and endurance, and improved balance and proprioception). However, this theory is lacking solid empirical support, and information as to how a SMP would structure such interventions within the context of rehabilitation is missing. Additional research has suggested that providing social support (Rees et al., 2010) and increasing autonomy in decision making (Podlog & Eklund, 2006; Podlog, Dimmock, & Miller, 2010) both of which target motivation, will lead to more positive outcomes. Moreover, studies have found that higher levels of social support from a variety of sources can decrease feelings of shock, emptiness, and frustration (Rees et al., 2010). SMPs play an integral role in supporting the athlete during the rehabilitation process, yet, if they feel unequipped to support the psychological needs of the injured athlete, this could affect the rehabilitation process (Podlog et al., 2014).

To date, the extant literature suggests that SMPs play a critical role in the psychology of injury recovery, yet lack formal training in psychological interventions (Clement et al., 2013).

While most SMPs report it is their job to address injury-related psychological issues, many SMPs feel unprepared when addressing these types of issues. Moreover, a majority of SMPs report there are not enough psychological services for injured student athletes, leading to a relatively low referral rate for athletes who may need these services (Clement et al., 2013; Mann et al., 2007). It is clear that although many SMPs feel it is their job to help with psychological issues, they are unprepared to implement strategies, and therefore would benefit from formal training in both sport-related and non-sport related psychological issues.

Thesis Statement: To understand how SMPs can better facilitate athletes' psychological recovery from sport injury, there first needs to be a better understanding of what athletes experience psychologically during the first two phases of injury rehabilitation (i.e., reaction to injury, and reaction to rehabilitation (Clement et al., 2015). To date, the evidence is limited to retrospective accounts of this process by athletes (Bianco, Malo, & Orlick, 2013; Clement et al., 2015; Tatsumi & Takenouchi, 2014), or used questionnaires instead of interviews (Leddy, Lambert, & Ogles, 1994; Morrey, Stuart, Smith, & Wiese-Bjornstal, 1999; Rees et al., 2010; Quinn & Fallon 2008). A prospective design would likely give insight to more emotions and psychological effects throughout the rehabilitation process as they would be more recent and in the moment, rather than reflective. Given the limited knowledge in this area, a qualitative case study was conducted to prospectively explore the psychological aspects of injury rehabilitation through phases of the rehabilitation process, from the perspective of an athlete, his/her SMP, and a support person.

Methodology

Approach. This case study was conducted using a narrative inquiry methodology framed by an interpretive paradigm with a focus on understanding and highlighting human experience

(Smith, 2009; Sparkes, Perez-Samaniego & Smith, 2011). Instead of seeking out the universal truth through a positivist/post positivist paradigm, this research is positioned by accepting there are multiple versions of social reality and that social knowledge is constructed and subjective, with the researchers acting as reflexive instruments in sharing this knowledge to enhance understanding and stimulate debate (McLeod, 1997; Smith & Sparkes, 2008). Through narrative inquiry, individuals share their storied lives that have been socially constructed, providing an opportunity to learn about their psycho-socio-cultural realities and creating space for multiple ways of knowing (Smith & Sparkes, 2009).

Participants. Eligibility for involvement in the proposed study included an athlete who: (a) was a current student athlete at an NCAA Division I institution; (b) had recently suffered an acute athletic injury (e.g., ACL tear, sprained ankle, broken or fractured bone) that caused a discontinuation from current sport activities; (c) was over 18 years of age; and (d) was going to do/were doing physical rehabilitation in hopes of returning to sport. These inclusion criteria were shared with potential participants to determine if they were a good fit for the project. Exclusion criteria included neurological injuries (e.g., concussions) and chronic injuries (e.g., low back pain).

Along with the student athlete, the SMP assigned to work with the student athlete was recruited. Given the overarching purpose of this research to better understand how athlete's experience the psychological effects of sport injury, as well as how SMPs can help athletes navigate this experience, it is critical to include the perspectives of both the athlete and the SMP. Doing so provided both triangulation of data (Guba & Lincoln, 2005; Sparkes & Smith, 2009), as well as allowed for more depth in understanding the psychological processes involved in the rehabilitation process. Having an SMP that is frequently working with the athlete provided more

information about how the athlete participant was coping with the rehabilitation component of return to sport. Additionally, a support person (e.g., friend) was recruited to add a third-party perspective on the rehabilitation process. With insight from a support person provided a more complete understanding of the psychological effects of sport injury by gaining insight to another view of the athlete's journey. Targeted sampling techniques were used to identify the potential support person. Specifically, we asked the athlete for contact information for individuals that were considered a primary support through the rehabilitation process. We then contacted one individual to invite to participate in the study, and that individual accepted the invitation.

Data Collection. Interviews with the athlete participant and the additional participants were semi-structured in nature (Kvale, 1996). Interview guides were created based on the existing literature on sport injury rehabilitation (Arvinen-Barrow et al., 2014; Clement, et al., 2015). Specific guides for each participant can be found in Appendix I (athlete), II (SMP), & III (support person). For each participant, interview data collection took place at two time points. The first interview was conducted immediately after enrollment and covered topics related to background of the athlete, as well as cognitive and emotional responses to the injury and rehabilitation process. At this point in the injury-recovery process the athlete had been injured and undergone surgery, but had not yet started the rehabilitation process. The second interview took place during the athlete's formal rehabilitation and covered topics related to cognitive, emotional, and behavioral responses of the athlete. The SMP interviews were similar in nature but included how the SMP perceived the athlete was reacting to injury, strategies used by the SMP to facilitate psychological aspects of injury rehabilitation, and how the SMP believed the athlete was recovering both physically and psychologically. Interviews for the support person were more general and explored how the athlete was coping overall with the injury process. To

protect confidentiality, no information was shared with participants as it related to the responses of other interviewees. In addition to interviews, the athlete participant was asked to keep a journal throughout the study period. The journal content of the journal entries focused on how the athlete felt the rehabilitation process was going, any changes in activities of daily living, coping with having to miss practices, any challenges, and confidence in the injured limb and returning to play, with specific prompts being listed in Appendix IV.

Data Analysis. The athlete-participant interviews and the two secondary participant interviews were all audio-recorded, transcribed, and read carefully multiple times by the research team prior to coding. These interviews, along with the participant's journal entries, were then analysed following Polkinghorne's (1995) seven stages of conducting a narrative analysis. Specifically, data was analysed to examine impact of: (1) contextual features (e.g., pre-injury factors including personality, and history of stressors leading to personal factors); (2) embodied dimensions of participant (e.g., personality factors including injury and psychological, demographic, and physical individual differences); (3) the influence of significant people in the participant's rehabilitation process (e.g., situational factors including sport, social, and environmental factors); (4) significant outcomes or choices that took places throughout the rehabilitation process; (5) a historical continuity that examined how past behaviour and choices influences the present (e.g., cognitive appraisal, emotional response, and behavioural response); (6) a temporal organization of the story that enabled examination of how various factors interacted at different time points to affect injury rehabilitation, and (7) the formation of a complete narrative.

At each of the first four stages of analysis (i.e., contextual features, embodied dimensions of the participant, significant people, choices and outcomes), transcripts were carefully re-read

and coded with the key concepts for that stage of analysis in mind. At each stage, the research team engaged in critical discussions about the coding and the themes that were created. The final three stages of analysis (i.e., historical continuity, temporal organization, narrative formation) were based on the first four stages, with the research team using the existing themes, categories, and stages to inform the historical continuity, temporal organization, and overall formation of the narrative.

Methodological Rigor. Consistent with an interpretive paradigm of research, a relativist approach to methodological rigor was employed. First, methodological coherence was achieved through the alignment of philosophical underpinnings, research methodology, data collection techniques and procedures, and data analysis procedures. In considering the methodological procedures, multiple interviews, with multiple informants, over time allowed for an iterative process to knowledge production, and a more nuanced interpretation of the sport injury process. To protect confidentiality, we kept the data sources separate when doing member checks so that each individual was only asked to comment on data they provided. Additionally, the senior researcher on the project served as a “critical friend” to help challenge and promote reflexivity on the part of the student researcher. Finally, we sought naturalistic and analytic generalizability to ensure this research advances knowledge in the field of sport and injury rehabilitation (Smith, 2018).

Results

Margo is an NCAA Division 1 athlete, who has been competing in her sport for the past 18 years. She suffered a non-contact injury during preseason training that was season-ending, required surgery, the use of a boot and crutches, and involved a year-long rehabilitation/recovery process. Despite her previous injury history, this is her first injury requiring surgery and an

extensive rehabilitation process. At the time of recruitment, Margo's injury had happened approximately one month prior to the initial interview. She was post-operative, but had yet to begin the rehabilitation process.

Background and Sport History

At the time of the injury, Margo had achieved junior standing at the university and had two years of NCAA eligibility left. This fact (i.e., limiting time remaining in her NCAA eligibility), combined with Margo's role as a meaningful contributor to her team, evoked strong emotional responses that likely impacted decisions made during the rehabilitation process. Moreover, Margo's experience on the team led to a previously existing relationship with her SMP, which helped to facilitate rapport and trust early in the rehabilitation process. Analysis from interviews (1 and 5 months post injury) and journal entries suggested three main contextual features relevant to the current case: 1) athlete status; 2) important to the team; and 3) injury as both common and novel.

Athlete status. As a young athlete, Margo was a high-level competitor on both a regional and a national stage. Her success as an athlete led to earning a spot on an NCAA DI athletic team. While she struggled early in her transition to NCAA athletics, she was able to make herself an integral part of the team by her second year on campus. Although she maintains an identity as both a student, and an athlete, her status as an athlete made separation from sport increasingly difficult.

Importance to the team. Another contextual feature that effected Margo's response to injury was her role on the team. Margo noted being emotionally upset after her injury reporting that she believed, "I let my teammates down, I let my coaches down. What am I going to do if I can't compete, what are they going to do to fill my spot?" Her importance to the team was

corroborated by both her SMP (Michelle) who stated “she has a high potential to contribute and a history of contributing” and her support person (a teammate; Maria), who expressed concern that their team was struggling to replace her.

Injury as both common and novel. Although Margo has been injured before, the injury she suffered is common to her sport, and she has been through rehabilitation for other injuries, Margo seems to label this injury as foreign and intimidating given the long timeline for returning to play. She has had two previous injuries (both broken bones), yet this is her first injury involving surgical intervention, which was concerning for her. “Going into surgery, I started to get really anxious, nervous, and scared.” Although Margo did go through rehabilitation for her previous injuries, they were informal and infrequent unlike the process for this injury. At the time of the first interview, Margo was unsure as to what the rehabilitation process would entail, only that it would be a long process, and that she would be immobile for a lengthy period of time. However, having a positive, pre-existing relationship with Michelle provided a level of comfort and familiarity that Margo felt was important for helping her emotionally and mentally recover from her injury. “She’s going to be the person I go to everyday... even if I need mental or emotional support, I’ve gone to her for that in the past, so I know she can do that...that definitely has a big impact on me, being able to talk to her and do things with her.” Important to note is that her SMP mentioned “[the injury] is fairly common in [sport], but it’s a pretty significant injury...the return to sport is quite high. Most people recover and return to sport if that’s what they choose.”

Since Margo has been involved in sport over a long period of time, it is an important part of her identity. Her past successes along with her ability to overcome past injuries, provided a baseline level of efficacy needed to go through the rehabilitation process. While the thought of a

long and tedious rehabilitation process was novel, the fact that Michelle has successfully rehabilitated many former athletes helped with a sense of reassurance. Moreover, her importance to the team the previous season likely evoked many emotions for Margo as the team prepared for the upcoming season. In the following section, Margo's shifting perception of her self-identity related to the rehabilitation process will be discussed.

Transitioning Perceptions of Athletic Identity

Throughout the injury rehabilitation process, Margo has been able to invest in herself beyond sport (i.e., focus on school). While this has been an overall positive, it is evident that a piece of her identity has been removed, evoking an emotional response. Following an analysis of interviews and journal entries, four themes related to embodied traits of the athlete were identified, all centered around the main core concept of identity: 1) athletic identity; 2) inability to perform athletic identity; 3) fear of future identity loss; and 4) attempt to balance fear and loss with a positive outlook.

Athletic identity. Margo strongly identified as an athlete. In regards to her status as an athlete, and what sport means to her, she commented she had been “doing it every single day for 18 years, is [what’s] normal. That’s my life, that’s all I’ve known since I was 2.” Given the longevity of her involvement in sport, it is important to note that there are many aspects of her identity tied to her role as an athlete, and thus affecting her coping process post-injury. Specifically, Margo identified her status as an athlete and as a teammate as highly valued roles she fills. She identifies sport as something that has taught her how to deal with all aspects of life including: being disciplined, doing things to the best of your ability, learning how to cope with stress from school, interacting with people, going to college, and moving outside of your comfort zone. The salience of her athletic identity was highlighted in her distress response regarding the

potential of the injury to end her athletic career. During the interview process she oscillated back and forth between emotional responses to “watching her career end” or “ending her career on something she’s done a million times,” and not wanting to consider the possibility of her career ending as a result of her injury.

Overtime, Margo has begun to shift from a primary athlete role identity, to encompass her athletic identity as one part of her social identity. Early in the rehabilitation process, Margo stated: “when I first hurt myself, it was definitely like this is all I know, and other than school... I didn’t really know what to do with myself during the times when I didn’t have practice.” However, she has now shifted to “working towards recreating that whole identity.” She mentions that her role as an athlete has changed slightly as her rehabilitation has progressed and she has taken a more supportive role as a teammate rather than a competitor; “I’m still an athlete, but that’s not everything that I can do.” As she has shifted in her role as an athlete, she has also mentioned a shift in the importance of her identity as both a student and as a future health professional. For example, Margo discussed the importance of having time to focus on school work and begin to prepare for a future in medical school. “I kind of realized that’s what I’m going to do for the rest of my life, so that needs to be kind of a shift towards... that’s more who I am rather than just an athlete, because that’s going to end in three years anyway.” Thus, critical to her overall well-being through the rehabilitation process was the ability understand the temporal nature of her athletic identity and that ultimately, this is only one part of her complete self.

Inability to perform identity. Throughout the interview process, Margo discussed her identity not only in static terms (e.g., “I am an athlete”) but also acknowledge the dynamic nature

of performing her identity. While injured, she is no longer able to perform her athletic identity, which ultimately caused a disconnection between her current and ideal self.

I know what it feels like to do all of those skills...I know the feelings of what it feels like but I can't do that. It's kind of slowly starting to be like I know what that feels like, but I can't feel it. I can't even see myself doing [that] because it's been such a long time since I've done them, and watching other people do it; it's like: I used to be able to do that.

Moreover, Margo associated part of her athletic identity with being a teammate, which has also caused distress as she is unable to 'perform' that function through the physical performance of her sport. In considering her inability to perform, she noted:

I can't do anything to help [the team] physically [and] it kind of hits me sometimes, because I feel like I want to be able to help them and I don't know if they're going to be able to do what they need to do when I'm not there.

When asked if a sense of not being able to perform her identity as an athlete had affected her ability to be who she is, Margo stated:

So I mean, yeah- definitely- and like losing that has definitely been like a big part of all the emotion and frustration. Everything I'm doing, literally all of the rehab I'm doing, everything I'm doing in the gym, even to help my teammates is to help me get back to where I was.

Beyond competition, Margo was also unable to perform basic functions of movement, which also tied to her loss of identity as an athletic and physically competent person. As she described:

that's the biggest issue for me, and it just drives me nuts, because I want to be able to walk up stairs and I can't. I mean getting around is honestly just the worst part and the fact that I know I'm not in pain anymore and I still can't use my foot. I sit down for the majority of my day and I can't do anything and that's just not who I am.

Thus, by taking away her ability to compete in sport, physically contribute as a teammate, and self-ambulate she has struggled to reconcile her past self (i.e., healthy active), to her current self (i.e., working towards higher levels of mobility).

Fear of future identity loss. Following injury, Margo reported experiencing a range of emotions, including: frustration and loss for not being her physical self, worry about letting others down, sadness, anger, and fear at the thought of possibly ending her career. While the loss of her current ability to perform her athletic identity was challenging, the fear of future loss evoked the strongest emotional response. Margo discussed being "terrified" of her career ending, specifically not ending on her terms. Inherent in this was a fear related to loss of personal volition as it relates to sport and movement endeavours: "I'm not that great about things that I can't control and that definitely is-this is definitely something I could not control so that was hard because I don't want to be done when I can't decide it." This need for personal control was also corroborated by Maria and Michelle, suggesting the importance of considering personality and individual difference throughout the rehabilitation process.

Beyond sport performance, Margo also expressed fear of the implications this injury might have on her future self. Despite early prognosis of a full recovery, she expressed concern about tasks associated with everyday living, and if she would ever be able to walk pain free again. As Margo explained:

It's still kind of hard for me to see the progress from here to doing [sport] again or being able to go climbing or go hiking or do whatever else I want to do with the rest of my life. So yeah, it's definitely still there and it still terrifies me.

Furthermore, Margo expressed a fear of reinjury, and what that might mean for both her future identity as an athlete, as well as for her future mobility. For example, Margo considered whether or not "my body is telling me you need to stop doing this, and I don't know, I don't really want to hurt myself again." This fear was likely exasperated by witnessing a competing athlete suffer an identical injury to Margo. As Michelle recalled of incident:

I saw another student athlete first that said 'I think that really, really scared her.' And of course, of course it did. We did talk about it, I didn't see her again for a couple of days, and by then she was more reflective on it than she was in that active moment.

Despite this, knowledge that others with the same injury have made successful returns has been a reassuring factor to help counter concerns related to the future.

Attempt to balance fear and loss with a positive outlook. Despite the identity concerns discussed above, Margo, Maria, and Michelle all independently noted that Margo has maintained a positive outlook throughout the rehabilitation process. Margo noted "Overall, I think I'm doing good...other teammates have told me 'you're really positive' ...I feel generally happy with my life." Similarly, Maria mentioned "she's been going about [her rehab] pretty positively. She gets really happy when she makes little steps." Michelle also stated "she seems to be reacting pretty positively to it [the injury] considering what it is." Although she has lost an entire season due to injury, and is undergoing a long rehabilitation process, Margo mentioned that "I feel generally happy with my life, even though I'm not doing the things I want to do." Though her injury has limited her physical abilities, she has shifted her focus to other parts of herself (e.g., school). As

a student with high academic ambitions, she reflected on the injury as a time to be able to refocus on academics: “With school being such a good thing, it’s kind of replacing that happiness of [sport].”

Despite an intentional focus of staying positive, sitting out a competitive season has come with challenges. In an effort to stay positive, Maria noted how Margo has focused on small victories in her rehabilitation process:

Every time she comes out of that she just seems really happy and positive about it, which I think is good. And she always tells everybody her little victories... And everyone on the team is really supportive, so we all get really excited for her. And that makes her happy too.

The bi-directional support of Margo and her team has also been prevalent through the rehabilitation process. One particularly challenging moment came when the team experienced success in post-season competition. Due to NCAA rules, Margo was not able to join her team in an official role. However, Maria and Michelle discussed how, despite being disappointed, Margo was able to travel by herself to the competitions, being a positive and supportive force for the rest of the team. Michelle remarked on Margo’s seemingly positive emotional reaction to traveling to watch and support the team in post-season competitions:

She went with three others that couldn’t compete, and they were everywhere, they were cheering for the team, they were a huge presence-so if it was bothering her [emotionally], she put it away. She was really, really there for the team, and they were part of a group that made a huge difference. When we left the hotel to go to the competition, it was the biggest send off that we had ever had. And we could

hear these [three athletes] just lead it. So, if it was there she had it really tucked away.

Throughout her rehabilitation process, Margo has maintained a positive outlook and has been a strong support for her teammates. While her overall reaction has been positive, she has shown signs of fears related to the injury, rehabilitation, and return to play process. Most notably, are her loss of athletic identity and fear of future identity loss. While these two themes are interconnected, she has found a way to maintain a positive outlook by shifting her view of herself as more than an athlete:

Putting all my time and energy into school and working towards that and trying to build my resume with other things has helped, because I kind of realized that's what I'm going to do for the rest of my life, so that needs to be kind of a shift towards- that's more who I am rather than just an athlete, because that's going to end in three years anyway.

Support Structures

Throughout the injury rehabilitation process, the support of others is often critical for athletes. During the first interview, Margo expressed that she has a strong support system, inclusive of both her family support system, as well as those in her sport. An analysis from interviews, as well as journal entries suggested two main forms of support for Margo relevant to the current case: 1) Holistic support from many people; 2) Support structures.

Holistic support from many people. Margo discussed having integrated support systems as she interacts with her coaches, teammates, and roommates on a daily basis. Michelle noted that keeping Margo involved with many support people is an important component of helping her through her return to sport process:

Looking at our unit here, working with the strength coach will be really beneficial, support from the coaches will be really beneficial, and then, for her, whatever her own support system that she brings in. Whether it's her mom or friends here, her roommates, her teammates, all of that will help support her.

At home she talked to her roommates who seem to be an outlet, "I live with a couple of my teammates, so that definitely helps; just talking about things, and being able to get out my frustration." The sources of support have progressed over time, as early in the rehabilitation process Margo spent a month at home with family. Despite being away from her teammates and sport personnel, she discussed the benefits of being home with family. Specifically, she discussed not having seen her dad and brother in six months, and that it was nice to be around them during that time, "my dad gets injured a lot, so he and I can kind of empathize with each other. So that was good just to be around them."

After returning to campus, Margo discussed the holistic support she receives from Michelle throughout her rehabilitation process. She says that her SMP is the person she sees every day and is comfortable just having regular conversation about everyday life with her:

She kind of talks to me more like a friend rather than a superior kinda-type thing, like we'll have just normal conversations. If I'm in pain, I'll let her know, and be like hey, can we work on this today or – I am really sore like what should I do, and she's usually pretty good and will ask me questions about how it feels or how I'm doing if I need it. She pretty much knows where I'm at if I say hey, I'm in pain or I'm frustrated with this she knows what to say. And we have normal conversations too, which kind of helps me keep my mind off of things and not worry about what I'm doing as much as just talking to her.

Along with her SMP, Margo mentioned the importance of her teammates being like a second family and another support system: “I have this group of girls who are basically like my second family, and I’m going to do everything I can to help them get through season.” Her roommates (also teammates) were identified as people Margo can vent and open up to, who also help reassure her:

My roommates and one of my other teammates [athlete] who has had like 4 knee surgeries, so she knows the ins and outs of injury, those three as far as teammates go have been the biggest [support] because I can talk to them about everything. I can vent, I can cry, and they’re like yeah- I’ve been there, you’re fine; everything’s going to be okay kinda-type people.

Support structures. As Michelle mentioned, Margo’s university has sport psychologists available to their athletes, which Margo had utilized prior to the injury. Moreover, Margo has received support from other athletes, through group discussion that are facilitated by the university sport psychologist, in which athletes can share their stories and struggles with rehabilitation and returning to play. Another support that has been useful to Margo in the past that she still continues to do, has been writing in a journal. When asked about getting through moments of doubt about her injury, Margo responded “I write a lot- that’s from when I would go see other psychological people [sport psychologists], so I write a lot about how I feel.” Thus, in addition to significant others providing support, various systems (i.e., access to sport psychology, athlete support groups, journaling) have also provided needed support throughout the rehabilitation process. This highlights the need for multiple modes and sources of support for injured athletes.

Tensions Throughout the Rehabilitation Process

The final stages of analysis included an examination of the significant outcomes or choices that took place throughout the rehabilitation process; a historical continuity that examined how past behaviour and choices influences the present (e.g., cognitive appraisal, emotional response, and behavioural response); a temporal organization of the story that enabled examination of how various factors interacted at different time points to affect injury rehabilitation, and the formation of a complete narrative. The results of this analysis revealed a series of tensions that unfolded over time germane to the rehabilitation process. These included: level of control over the rehabilitation process; ongoing relationship with the AT; return to competition; and support for self and others.

Need for control versus unsure of rehabilitation process. Margo described herself as having perfectionistic tendencies and needing to be in control. This was also corroborated by her roommate, Maria. Given this, it was surprising that early in process, Margo noted that she was unsure of what the rehabilitation process would entail. During the first interview, Margo noted, “at this point, I’m already missing season, and I’m not going to be able to do [sport] and I know that, so I guess it doesn’t really matter exactly what I’m doing at this point.” However, the discrepancy between Margo’s need for control, and initial passive attitude towards her rehabilitation ultimately caused a series of frustrations.

I definitely feel like I was a little bit in the dark, which is frustrating, like going into that doctor’s appointment I honestly had no idea where I was supposed to be. I thought, oh I can walk, I can do calf raises, I can do all this, I’ve been doing all this stuff, my trainer says I’m doing great. I should be able to move on, next step, right? But then I went into the doctor and he asked me to walk on my toes, and I was like okay I don’t know how to do that, and I couldn’t do it. And so, that was

kind of like, okay you're not strong enough to do stuff yet, so you can't do [sport drill], and I was like- well shouldn't I be able to? We said a month ago or whatever that I was going to be able to, and so I don't know I think it was kind of a frustration, because I didn't know what I needed to do to get to that point.

As the process of injury rehabilitation unfolded, the tension between a need for control, and being unsure of the full rehabilitation plan remained prevalent. For example, Margo noted having trust in her SMP to get her back to health:

I'm going to put this in her hands, because she knows how to get me back to doing all of this. And it hurt to walk, so I was like this is going to take a while, so I kind of just in my head was like alright, this is going to take some time, just let it like ride it out, whatever. So I never really actively went to her and was like "hey, can we try this next thing, I feel good" or whatever.

Yet, at the same time, Margo expressed frustrations when she was unable to drive the rehabilitation process, "[it is] frustrating not to have a say, but I think that's just part of me not being able to control things, which I kind of have to deal with at this point."

Interestingly, Margo had conflicting views of whether she wanted more control over the process:

Yes, and no. Because I feel like if I did have more say, and was like -hey I'm going to do this, but then I was in pain then I'd be like well I have to take a step back. And I feel like I know my body well enough that if I'm in pain I'm not going to keep doing something. But I feel like having that on myself would be a little easier to deal with, but at the same time, it would probably be just as frustrating just because I wouldn't be able to do anything anyway.

In considering this tension, Margo discussed her trust in the AT, concomitant with the length of rehabilitation as reasons for the gap between her need for control (in general) and her lack of attempting to control the rehabilitation process. However, another possibility for this tension, particularly early in the injury rehabilitation process, is that cognitive avoidance was used as a coping mechanism for a fear of an uncertain future. Notably, it seemed that Margo was unsure of what the future would hold for her and was therefore unwilling to consider future pain or disappointment relating to her current injury:

I just feel like it's [injured limb] never going to be the same as it was, so I'm afraid that it's going to hurt when I move it...One of the biggest emotional difficulties for me will be dealing with pain, and not knowing whether that pain is ever going to go away, I think that's one of my biggest fear actually. My fear is: what if that never goes away...what if it's never the same, what if I come back, and I can't do anything?

When asked if she had thought past these fears playing out, she answered, "I don't really want to- so no."

While Margo has ultimately been an active participant in her rehabilitation, as evidenced by her own report, and that of her SMP and support person, it is important to consider that fear of an uncertain future due to a major injury may be a cognitive barrier to rehabilitation planning and adherence. As time progressed, communication with Michelle become an important strategy for Margo, "...I talked to her about it. And we set a plan, which is why I know in about a month, I'll be able to do this next thing. But yeah, it's definitely kind of frustrating." Further, encouragement from others to be open and to discuss ongoing fears and frustrations were an

important factor. For example, Margo's roommate, Maria, encouraged her to be open and honest with her SMP throughout the process:

I think she kind of stew- she kind of gets frustrated and tells me about it, but I think I tell her a lot and my other roommate tells her a lot just to talk to our trainer. Because she doesn't know how you're feeling internally, she can see what you're doing but she doesn't know how you're feeling, so I try to remind her that quite often.

Thus, while the fear and anxiety associated with rehabilitation from a major injury may serve as a barrier, effective and ongoing communication is needed to ensure that all stakeholders in the rehabilitation process are working together to address needs as they arise through the rehabilitation process.

Cognitive versus affective response to the rehabilitation process. Another tension that was identified was the discrepancies between Margo's cognitive appraisal of the rehabilitation process and her emotional responses. For example, Margo discusses that the rehabilitation process is going well (i.e., cognitive appraisal), yet still experiences frustration at minor set-backs (i.e., emotional response). For example, Margo stated, "I'm obviously making progress, so there's a part of me that's like okay, it's not that big a deal." Yet at the same time, Margo expresses frustration when having minor set-backs in the process: "I'm getting further in the process; I should be able to do these things. And then when they don't happen, I get frustrated because I'm like, but I feel like I can do it." Interestingly, there appear to be differing perceptions of the rehabilitation process for Margo and Michelle. Michelle, who has 25 years of experience as a SMP has discussed the rehabilitation process as having followed "normal parameters" with

no real “unexpected events.” On the other hand, for Margo, this process is unique and each set back comes with varying degrees of frustration and negative emotions.

The tension between cognitive appraisals and emotional responses was also discussed in the context of in-season support for Margo and the other athletes on the team. Margo discussed that the SMP often did not have time to treat her in season due to the high demand of checking in with competing athletes. Given the number of athletes on the team, and the role of the SMP to the team, Margo noted that she understood the urgent need for treatment that some athletes had, particularly relative to her as a non-competing athlete:

Sometimes [I] will go in for morning treatments, and the girls are getting ready for practice so she has to help them with their stuff, because they’re actually doing things. And for the most part it doesn’t, if I don’t get massaged out that day, it’s not like I’m in any more pain than I am when she does...

While Margo understands this on a cognitive level, it still resonates negatively on an emotional level:

I see her every single day, it’s easier to talk to her and I still have frustrations sometimes when she kind of puts me off, especially during season, because her priority are the girls who are competing, and I’m kind of an after-thought. Which is definitely frustrating, but I’ve talked to her more and it’s a lot easier to talk to her now that I’m around her more...

While Margo went on to note that many days the SMP “literally does not have any time” this finding underscores the importance of psychological well-being to the recovery process.

Notably, without ensuring that the athlete is recovering both physically and mentally, minor

frustrations can build over time that ultimately impact the injury rehabilitation process. As Michelle noted:

I think it's just always a reminder though again, that probably supporting someone's mental health and explaining what you're doing and spending time with the person is probably more valuable than the actual physical exercises. Because it eventually would improve, even if those weren't right on point. But helping someone be able to get through the process is probably even more valuable.

Benefits versus costs of return to competition. A third tension that was identified was the benefits and costs of returning to competition. On the one hand, Margo discussed her love of the sport, the sport as a part of her identity, and wanting the choice of when she would stop competing. Moreover, all indications were that despite a serious injury, there was a positive prognosis for return to play. According to Michelle:

She's a pretty motivated to return back to her sport...I feel like it's quite promising she's a really focussed and diligent kid, so I don't foresee us having trouble with the rehab process. I would anticipate a really good outcome.

On the other hand, Margo is aware of the possibilities of re-injuring herself and discussed the possibility that this injury may be a symbol of her body telling her to be done with the sport.

I had this horrible injury, and I've never had an injury before, I'm like okay, my body is telling me you need to stop doing this, and I don't know, I don't really want to hurt myself again. I think there's that underlying fear that's like okay, if I go back, and I get injured again, or I hurt something else, or it just doesn't

respond the way I want it to, then what am I doing for five years if I can't do anything? So I don't know, there was that, a little bit about just like the fear of like I'm not going to be able to actually do this again.

Concomitantly, Margo has considered whether or not she will be able to return to the same level of pre-injury skill:

One of my biggest worries is getting back, but not being able to do everything I could before. Or just being really tentative with everything, because I'm trying to save my body and just make sure I don't get hurt again. I don't know, I feel like that's going to be a big part of it no matter what, like even if I am physically able to go out and do everything, it's definitely just going to be one of those things I have to learn how to rebuild of that confidence in my body.

Despite these fears, Margo also voiced having unfinished business. She mentioned that not competing both her freshman year and this year helped her pursue the decision to take a 5th year in order to help the team:

Not competing my freshman year, was like okay, if I only stay here for 4 years and I'm only competing 2 out of my 4 years, I was like I don't want to do that, I want to give more to the team and everything, so I don't know, I feel like it was pretty much just a given that I was going to come back.

While Margo has indicated that she plans to take a 5th year of eligibility to extend her sport career, she also seems not yet ready to fully commit as she notes, "I need to make sure I'm really going to be able to get back before I can do anything..." Margo and Michelle both discussed having ongoing conversations around return to play and extended eligibility, which is a likely a needed topic to addressed during long injury recovery periods.

Need for support versus need to support. Throughout the rehabilitation process, there has been tensions between wanting to be there for and fully support her team, and having to watch others do what she loves as she sits on the side lines. After spending winter break away from her team, Margo reflected that going home for a month helped her come back “refreshed” and ready to be a better, more supportive teammate. She felt that going home gave her some much needed time to solely focus on herself and reflect on all that had happened:

I think it gave me a bigger appreciation for my teammates and being there for them, and not worrying about myself as much; because it kind of gave me some time to focus on myself for a bit, so when I came back it was like, I can put all of my energy into you guys now.

If Margo had stayed, she thinks she would have been “miserable” just watching practice and not being able to do anything. While she felt the need to support her team as much as she could, Margo was unsure of how to do that as a non-competitor. While her decision to return home was viewed as positive, she also felt disconnected from the team immediately after her return: “I definitely feel like I was not part of the team when season started, because I came back, and that weekend they had their first meet. So, I just kind of felt disconnected.” However, over time she was able to reintegrate herself back into the team culture, and noted that watching the team compete became easier over time.

Aside from the challenges of wanting to support others, while considering her own needs, Margo expressed mixed feeling on receiving active support. On the one hand, she discussed wanting her SMP to check in with her more regarding her emotional well-being, while on the other hand admitted that she does not like when people inquire into her emotions. As Margo noted, “it kind of stresses me out more than anything if someone’s like are you okay, do you

need anything? If they're all up in my business kind of mentally or physically, it's kind of overwhelming." As mentioned by Margo, Michelle, and Maria the constant and ongoing contact between Margo and Michelle has created opportunities to check in when needed, particularly around emotionally charged topics. Specifically, Maria mentions that more support is needed during times of transition:

I think each new transition period is kind of like an unknown, because she didn't really know how she should be feeling. And then she gets into a routine where everyday she is feeling stronger, and then there's going to be something new happening, like another transition phase from rehab and not doing anything in the gym to doing more things in the gym where she's going to be put in different situations that are different than her current routine, so I think that's another place where she's going to need another support.

Thus, while a tension exists between wanting support and not wanting others to overwhelm her, creating opportunities through "checking in" asking "open questions" and providing time and space helps to balance these needs.

Discussion

The purpose of this study was to investigate the psychological effects of sport injury on an NCAA D1 student athlete in order to understand how SMPs could better support athletes in their return to play processes. The athlete, SMP, and support person in this study were all asked to reflect on the experiences of the athlete in order to gain a broader, more complete view of what athletes' might experience throughout the rehabilitation process, and how it relates to their emotional and psychological health. Throughout the first two phases of the return to play process (reaction to injury, and reaction to rehabilitation), the importance of taking care of an athletes

psychological and emotional health, concurrent with physical health was prevalent. Specifically, transition periods (e.g., surgery, transitioning out of boot, team beginning their season, reintegrating with team) were identified as particularly stressful for the athlete, indicating a need to monitor and support athletes throughout these timeframes. Other areas that seemed to evoke an increased need for support included times of heightened emotions, witnessing another athlete experience the same injury, not being able to cheer for teammates during performance, and having to watch from the side lines after the team advanced in post-season competitions. While the athlete in this study discussed not wanting to be constantly asked how she was doing, her SMP and support person discussed open ended questions and active listening as strategies to help her process her emotions when needed.

Research has shown that athletes who receive sport-related injuries often have increased feelings of depression, anxiety, negative emotions, lowered self-esteem, decreased well-being, and greater fear-avoidance beliefs (Putukian, 2016; Houston, Hoch, Van Lunen, & Hoch, 2017). However, in the context of this case study the athlete only seemed to exhibit anxiety, fear-avoidance, and negative emotions related to her injury and recovery process. As suggested in the interviews, this is likely due to the pre-existing coping skills possessed by the athlete, her strong support system, and her other identities as friend, student, family member, and future health professional. All three participants mentioned that having a large and diverse support system as well as a focus on school as helpful to coping throughout the injury-rehabilitation process. Both the SMP and support person recalled that the athlete had characteristics of being focused and determined and that these were helpful to continuing with the long and tedious rehabilitation process.

Another way this case differs from the existing literature is that the SMP had over 25 years of rehabilitation experience, and a history of working with the school's mental health services. Throughout her experience, the SMP developed a holistic approach to injury treatment and noted how important psychological and emotional responses were to a full recovery. The SMP also mentioned the development of more mental health resources for the athletes, as well as creating a more accessible and de-stigmatized resource for athletes. A survey in 2016 suggested that only 38.3% of NCAA institutions had access to a mental health professional, however this athlete had access to and used the services available at her university (Kroshus, 2016). As suggested in the literature, SMPs play an integral role in psychological injury recovery, and are critical in helping athletes make connections with other forms of support that may be helpful (Clement et al., 2013). SMPs have reported that it is important to address psychological responses to injury, yet many have reported feeling unprepared to use psychological strategies in the rehabilitation process (Arvinen-Barrow, Massey, & Hemmings, 2014; Clement, Granquist, & Arvinen-Barrow, 2013). In this case study, the SMP was able to use psychological resources available at her institution to aid in the psychological responses to injury for her athlete(s). Specifically, writing in a journal, and attending a support group that shared struggles and successes with other injured athletes.

The integrated model of psychological response to sport injury and rehabilitation suggests a reciprocal and cyclical relationship between athletes' cognitive appraisals, emotional responses, and behavioral responses (Wiese-bjornstal, Smith, Shaffer, & Morrey, 1998). Data from the current study suggest that there may be incongruence between cognitive and affective responses to the injury rehabilitation process, prompting a need to monitor both cognitive appraisals and emotional responses. Cognitive appraisals often involved athlete's thoughts of

worry about disappointing their team, as well as concerns about not meeting their goals or being able to return to pre-injury level of playing (Podlog, Heil, & Shulte, 2014). Both of these cognitive appraisals were shown in this study, and were some of the pieces the athlete struggled with the most. These negative cognitive appraisals likely led to some of the negative emotions that were felt throughout the rehabilitation process. While the SMP suggests that the athlete is recovering at a fairly normal pace, the athlete feels that she should be further along than she is. On multiple occasions, the athlete mentions fear of re-injury suggesting that the cognitive appraisals do have an affect on emotional responses. Yet another discrepancy from the literature is that despite having many negative emotions and reactions, all three participants suggest that the rehabilitation is going well, and that the athlete has an overall positive reaction and cognitive appraisal of the progress she is making.

All three interviewees suggested a sense of separation from team throughout the process; while not purposeful, it evoked a negative emotional response from the athlete. Despite the feelings of separation from team, frustrations throughout the rehabilitation process, and fear of re-injury, the athlete was able to maintain an overall positive outlook on the process. It seems that while cognitive appraisals may evoke emotional responses, the athlete may hide emotions that differ from their cognitive appraisal, suggesting a need to monitor both. In terms of behavioral responses, researchers have noted that the most adaptive responses include using psychological skills, using social networks, decreasing risk taking, and adhering to rehabilitation protocols (Walker, Thatcher, & Lavellee, 2007). The athlete in this study seems to partake in all of these suggested strategies; she writes in her journal, goes to a support group, interacts with many social networks, and shows up to her do her rehabilitation everyday not pushing herself farther than her SMP advises. Her ability to maintain consistency and continue to maintain a

positive outlook on the rehabilitation process overall is likely integral to the congruency in the reporting of all three respondents.

Examining the data gathered from the athlete, SMP, and support person, it seems that communication, reintegrating the injured athlete with the team, and a variety of sources for support are all important aspects in the successful return to play. The support person discussed the importance of talking to the SMP when feeling frustrated with the process, mentioning the need for open communication to ensure emotional, as well as physical needs are met. The athlete also expressed how vital daily communication was with her SMP to keep her reassured that she was on the right track. Both the support person, and SMP also emphasized the importance of open-communication between athlete and SMP. Studies have found that higher levels of social support from a variety of sources can decrease feelings of shock, emptiness, and frustration (Rees et al., 2010). The many and integrated support sources available to this athlete appear to have made for a smoother rehabilitation process, and helped prevent many of the negative emotions often associated with athletic injury.

While this study outlines the importance of having a variety of support systems, clear communication with SMPs, and reintegrating the athlete with the team, there are many more factors that could have impacted this particular case. Due to the purpose of this case study, adding psychological intervention strategies to the normal practices of the SMP was not sought out. However, future researchers might examine whether or not the addition of psychological interventions to the rehabilitation process increased positive emotions during rehabilitation and returning to play, and whether or not the athlete found these interventions useful. Additionally, the issue of SMP to athlete ratio was brought up, and this should be looked into further. At the NCAA DI level, there is usually one SMP assigned per team, sometimes SMPs are assigned 2

teams. Future research should be done on the effects of caring for multiple teams as an SMP, and how that impacts the SMPs' ability to holistically treat their athletes. The main findings of this study suggest that athletes have higher emotional responses during phases of transitioning (initial injury, rehabilitation, returning to play), as well as when taking on new tasks throughout the rehabilitation process (being on crutches, getting out of a boot, the start of the competitive season, and returning to sporting activities). Psychological strategies such as journaling, having a strong support system, and going to a support group or finding peers who are going through a similar process seem to be helpful in keeping an overall positive cognitive appraisal. While a cognitive appraisal may be prevalent throughout the majority of the process, it is possible that these appraisals still evoke negative emotional feelings which should also be monitored throughout the return to play process. This need for continual monitoring of both cognitive appraisal and emotional responses reiterates the importance of continuous and clear communication between athlete and SMP.

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APPENDIX I:

INTERVIEW GUIDE FOR ATHLETE

Phase 1: Reaction to injury

Background Questions:

- Age
- Gender
- Primary sport played
- Could you tell me about how you got involved with your sport?
- Injury history
- Have you ever had an injury similar to this one before?
- Do you have any previous experiences in attending physical rehabilitation?
 - If yes, what have those been like?
- Do you have any previous experience working with a sport psychologist or doing any type of mental training for sport performance?
 - If yes, what have those experiences been like?

Primary Question #1: Can you take me through what happened when you were most recently injured?

Follow-up questions:

- Can you describe your initial thoughts and emotions after sustaining your injury?
- Tell me about your initial appraisal of how serious the injury was?
- Has that changed since learning more about the injury?
- Have any changes in your injury severity changed how you have thought or felt about the process?

Primary Question #2: Can you take me through the impact the injury has had on you personally?

Follow-up questions:

- Impact in sport?
- Impact in academics?
- Impact in social life?
- How do you feel you are coping with your injury?
- What is the most challenging aspect of being injured?

Primary Question #3: What are your expectations of the rehabilitation process?

Follow-up questions:

- What is your role in the rehabilitation process?
- What is your SMPs role in the rehabilitation process?
- Are there other people you deem important to the process?
- Have you considered any emotional difficulties you might face as a result of the injury?
 - If yes, do you have a plan to cope with these?
 - If yes, do you think your SMP has a role to play in helping you?

Phase 2: Reaction to rehabilitation

Primary Question #1: How have things been going since we last talked?

Follow-up questions:

- What has been the most positive aspects of the rehabilitation process?
 - Probe: Thoughts and feelings associated with this
- What has been the most challenge aspects of the rehabilitation process

- Probe: Thoughts and feelings associated with this
- How have you coped with the process thus far?
 - Strategies used?
 - Support systems involved?

Primary Question #2: Can you take me through the rehabilitation process thus far?

Follow-up questions:

- What types of physical interventions have you been completing?
 - Probe: Thoughts and feelings associated with this
- What types (if any) of psychological interventions have you been completing?
 - Probe: Thoughts and feelings associated with this
- Do you feel you are on track for your goals?
 - Probe: Thoughts and feelings associated with this
- How has the SMP supported you during the process?
- Do you feel there are things your SMP could be doing that could support you even more?
 - If yes, probe what could be done and how it could be done.
- Can you tell me about the environment during your rehabilitation sessions?
 - Probe: Things that are helpful and things that could improve
- How often do you discuss any concerns with your SMP?
- Has the rehabilitation process met your initial expectations?
 - Why/why not?

Primary Question #3: Can you tell me about the various people who have supported you through the rehabilitation process?

- **Follow-up questions:**

- When you got injured, who did you turn to for support?
 - Probe: How were these people supportive
- Are you still using these resources as a source of support?
 - Probe: Timeframe for support and if there are any transitions in support needed
- Can you tell me anything specific that is helping with your recovery?
- In a similar manner, can you tell me anything specific that has hindered your recovery?

APPENDIX II:

INTERVIEW GUIDE FOR SMP

Phase 1: Reaction to injury

Background:

- Age
- Gender
- Years of experience
- Can you tell me about your general approach to injury rehabilitation?
- In your experience what are the biggest psychological barriers to injury-rehabilitation and return to play?
- How do you typically deal with or address these barriers?
- Could you tell me about (athlete) and his/her injury?
- Given the injury and what you know about the athlete, are there any barriers you foresee as part of the injury process?
- Is there another SMP besides you that the athlete is seeing for treatment?
- **Primary Question #1:** In your view, how did (athlete) respond to the original injury?
- **Follow-up questions:**
 - Describe the athlete's initial reaction and emotions after sustaining their injury.
 - How did these thoughts and emotions after they learned about the seriousness and impact of the injury?
 - Could you explain how the injury has affected them?
 - How do you feel they have coped with their injury?
 - How do you think they feel about their injury now?

- What do you feel has been the most challenging aspect of being injured for them?
- Could you tell me how they did or how they are coping with that?
- Is the athlete reacting in a typical manner for this type of injury?
- Is there anything troubling to you about the athlete's initial reaction to injury?

Primary Question #2: What are your expectations of the rehabilitation process?

Follow-up questions:

- What is your role in the rehabilitation process?
- What is the (athlete) role in the rehabilitation process?
- Are there other people you deem important to the process?
- What do you generally do if athletes are experiencing psychological or emotional difficulties during the process?

Phase 2: Reaction to rehabilitation

Primary Question #1: How have things been going with (athlete) since we last talked?

Follow-up questions:

- What has been the most positive aspects of the rehabilitation process?
 - Probe: Your perception of the athlete's experience with this
- What has been the most challenge aspects of the rehabilitation process
 - Probe: Your perception of the athlete's experience with this
- How has (athlete) coped with the process thus far?

Primary Question #2: Can you take me through the rehabilitation process thus far?

Follow-up questions:

- How has (athlete) been doing with physical rehabilitation?
- How has (athlete) mood been during this process?

- Has there been any barriers to the process? If yes, how has (athlete) coped with this?
- Do you feel (athlete) is on track?
- Can you tell me about specific methods or techniques you have seen or discussed using with the athlete to help cope with their injury?
- Do you believe you have provided any psychological or emotional support during the rehabilitation process?
 - If yes, please describe.
- Do you feel (athlete) needs more support than you are able to provide?
 - If yes, what else is needed?
- How often do you discuss any concerns with (athlete)?
- Has the rehabilitation process met your initial expectations?
 - Why/why not?
- Do you think (athlete) feels like he/she are on track for returning to play?
- Have you noticed any behavior of the athlete that is out of the ordinary?
- How often does the athlete discuss expectations, aspirations, and feelings with you about their recovery?

APPENDIX III:

INTERVIEW GUIDE FOR SUPPORT PERSON

Phase 1: Reaction to injury

Background

- Age
- Gender
- How do you know (athlete)?
- How long have you known each other?
- Can you tell me a little bit about your relationship with (athlete)?
- Could you tell me about (athlete) as a person?
- Could you tell me about (athlete) as an athlete?
- Have you supported (athlete) through any previous sport injuries?
 - If yes, describe/explain.
- How did you find out about the current injury?

Primary Question #1: In your view, how did (athlete) respond to the original injury?

Follow-up questions:

- Describe the athlete's initial reaction and emotions after sustaining their injury.
- How did these thoughts and emotions after they learned about the seriousness and impact of the injury?
- Could you explain how the injury has affected them?
- How do you feel they have coped with their injury?
- How do you think they feel about their injury now?
- What do you feel has been the most challenging aspect of being injured for them?

- How do you believe they are coping with that?
- Is the athlete reacting in a typical manner for this type of injury?
- Is there anything troubling to you about the athlete's initial reaction to injury?

Primary Question #1: What supports do you think (athlete) will need during the injury recovery process?

Phase 2: Reaction to rehabilitation

Primary Question #1: How have things been going with (athlete) since we last talked?

Follow-up questions:

- What has been the most positive aspects of the rehabilitation process?
 - Probe: Your perception of the athlete's experience with this
- What has been the most challenge aspects of the rehabilitation process
 - Probe: Your perception of the athlete's experience with this
- How has (athlete) coped with the process thus far?

Primary Question #2: Can you take me through the rehabilitation process thus far from your viewpoint?

Follow-up questions:

- How has (athlete) mood been during this process?
- Has there been any barriers to the process? If yes, how has (athlete) coped with this?
- Can you tell me about anything you have seen (athlete) do or discussed with (athlete) to help cope with his/her injury?
- Do you believe you have provided any psychological or emotional support during the rehabilitation process?

- If yes, please describe.
- Do you feel (athlete) needs more support than he/she is getting?
 - If yes, what else is needed?
- How often do you discuss any concerns with (athlete)?
- Have you noticed any behavior of the athlete that is out of the ordinary?
- How often does (athlete) discuss expectations, aspirations, and feelings with you about their recovery?

APPENDIX IV:

PROMPTS FOR JOURNAL ENTRIES

- Throughout the course of this study, please documents any thoughts and/or emotions that take place during your rehabilitation sessions, or any struggles and/or success you experience during the process. Additionally, please respond weekly to the following prompts:
 1. What was the most psychologically challenging aspect of rehabilitation this week?
 2. Were there any strategies you used to help stay mentally strong during the week? If yes, please describe?
 3. Are there things your SMP is doing to help with you mentally with rehabilitation? If yes, please describe.
 4. Are there things you wish your SMP was doing to help you mentally with rehabilitation? If yes, please describe.
 5. Do you feel confident that you will be able to return to pre-injury levels in the amount of time rehab has been prescribed?
 6. Do you feel like you are on track for return to play?