

SEEBERG, STEVEN A., Ph.D. A Qualitative Investigation of Sport Injury Rehabilitation Motivation from the Perspective of the ATC-Athlete Dyad. (2016) Directed by Dr. Jennifer L. Etnier. 156 pp.

It is estimated that over 50,000 sport injuries are sustained by NCAA athletes every year (Dick, Agel, & Marshall, 2007). Many of these injuries require rehabilitation, and proper adherence to a prescribed rehabilitation program has long been known to lead to better rehabilitation outcomes (Brewer, Van Raalte, Cornelius, Petitpas, Sklar, Pohlman, et al., 2000; Derscheid & Feiring, 1987; Heredia, Munoz, & Artaza, 2004). However, the mechanisms by which adherence to a rehabilitation program can be achieved are not yet well-understood, perhaps due to a lack of rich qualitative studies designed to explore the complexities of the rehabilitation process (Ohman, 2005). To begin to alleviate this shortcoming, the purpose of this study is to qualitatively investigate athletes' motivation in the context of sport injury rehabilitation. More specifically, certified athletic trainers (ATCs) and NCAA athletes were observed during rehabilitation sessions and interviewed in a semistructured manner to determine how self-determination theory (SDT) constructs may affect adherence to sport injury rehabilitation programs. Data analysis revealed three influential categories: ATC-athlete relationship, athlete autonomy, and ATC competence. Two themes (trust, autonomy by necessity) were also uncovered and a negative case was identified. Findings coincide with prior research highlighting the importance of trust and the ATC-athlete relationship. Autonomy by necessity represents a novel finding within sport psychology literature. Implications for future research include examining the role of trust with the sport injury rehabilitation

context relative to SDT and identifying specific behaviors ATCs can engage in to regulate their athletes' motivation to adhere.

A QUALITATIVE INVESTIGATION OF SPORT INJURY REHABILITATION
MOTIVATION FROM THE PERSPECTIVE OF
THE ATC-ATHLETE DYAD

by

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A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
2016

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CHAPTER I

INTRODUCTION

From 1988-2004, roughly 25% of NCAA member institutions participated in an injury recording program known as the Injury Surveillance System (ISS). Over the course of the system, in excess of 200,000 injuries (12,500 injuries per year), defined as requiring medical attention and at least one day of missed participation in practices or games, were reported (Dick, Agel, & Marshall, 2007). If extrapolated to the over 1000 current NCAA institutions, it is likely that more than 50,000 sport-related injuries are sustained by NCAA athletes every year.

Once an athlete sustains an injury serious enough to force a leave of absence from his/her sport, the rehabilitation process begins. If an injury warrants at least seven days of missed participation, it is classified as a moderate injury; 21 days or more is considered severe (Petrie & Falkstein, 1998). Both moderate and severe injuries, which make up more than 25% of the injuries reported to the ISS, typically require an athletic trainer to create a rehabilitation program for the athlete to follow to ensure full recovery (Dick, Agel, & Marshall, 2007). However, the psychological rehabilitation that may or may not be occurring in conjunction with physical rehabilitation may be as important as rehabilitating the physical injury. The importance of healing psychologically from an

athletic injury is understood by many athletic trainers, and one study demonstrated that over 80% of athletic trainers believed that additional psychological training would be beneficial to their athletic training curricula (Gordon, Milios & Grove, 1991). In an effort to understand the psychological factors associated with sport injury rehabilitation, multiple models have been proposed (e.g. biopsychosocial model, integrated model of response) to incorporate the myriad factors affecting an athlete's rehabilitation (Brewer, 1999; Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998). Injury factors (severity, injury history), psychological factors (stressors, coping skills), and social factors (relationship with coach or athletic trainer, social support) are all hypothesized to play important roles in determining the overall outcome of the rehabilitation process (Brewer, 1999; Wiese-Bjornstal, Smith, Shaffer et al., 1998).

One of the myriad factors affecting sport injury rehabilitation and adherence that received early attention in sport psychology literature is motivation (Fisher, Domm, & Wuest, 1988; Weiss & Troxel, 1986). Defined as the direction and intensity of an individual's effort, motivation has been studied from a variety of theoretical viewpoints in the context of sport injury rehabilitation (Sage, 1977). Typically, motivation has been examined as it relates to adherence to a rehabilitation regimen with the basic principle being that the higher an individual's motivation or levels of a theory's specific constructs, the greater the adherence to a rehabilitation program. Several motivational theories have been employed in the sport injury rehabilitation setting. Personal investment theory, achievement theory, and protection motivation theory have been utilized and positive relationships between the respective theories' constructs and rehabilitation adherence

were found (Brewer, Cornelius, Van Raalte, Petitpas, Sklar, & Pohlman, et al., 2003; Duda, Smart, & Tappe, 1989; Lampton, Lambert, & Yost, 1993; Taylor & May, 1996). One notable exception to the aforementioned theories is the theory of planned behavior (TPB), which was not well-supported when examining sport injury rehabilitation intentions and behaviors (Niven, Nevill, Sayers, & Cullen, 2012).

Another motivational theory, self-determination theory (SDT), is particularly well-supported in previous literature. In addition to supportive research focused on SDT and its components, prior research has repeatedly linked the theory's individual constructs to better adherence even when the theory was not being considered in its entirety. SDT states that there are three primary, universal psychological needs: autonomy, competence and relatedness. Autonomy is the innate desire to be the causal agent of one's own life. Competence refers to individuals' need to seek mastery experiences. Relatedness is the inherent inclination to feel connected to and interact with other individuals. According to SDT, individuals will innately seek these constructs for their own well-being and be more motivated by tasks that satisfy one or more of these psychological needs (Deci & Ryan, 1985). The more fully an individuals' three basic psychological needs are met, the closer to fully self-determined motivation the individual becomes for any given task. Additionally, a motivation continuum is included in SDT. All individuals can be categorized on this motivational continuum for any task. The continuum moves from amotivation at the lowest end, followed by varied forms of extrinsic motivation, and finally to intrinsic, self-determined motivation (Deci & Ryan, 1985).

In the sport injury rehabilitation setting, the autonomy construct has been the focus of multiple studies. Levy, Polman, and Borkoles (2008) found that athletes who had higher ratings of perceived autonomy support had significantly higher adherence levels. High autonomous motivation in the sport injury rehabilitation setting has also been linked to high levels of autonomous sport motivation, meaning athletes highly motivated to work autonomously in their sport of choice tend to be similarly motivated when rehabilitating an injury (Chan, Hagger, & Spray, 2011). More recently, a study combined SDT with TPB to examine rehabilitation intentions as well as injury prevention behaviors. Using TPB constructs (subjective norm of a behavior, personal attitude toward a behavior, and perceived behavioral control) as mediators, path analyses demonstrated that each TPB construct significantly mediated autonomous motivation's link to behavioral intentions during rehabilitation. Autonomous motivation, in turn, significantly predicted rehabilitation intentions and injury prevention behaviors (Chan & Hagger, 2012).

Previous research demonstrates the influence of autonomous motivation and perceived autonomy support on rehabilitation adherence of sport injury; however, the effects, if any, of competence and relatedness on rehabilitation motivation and adherence are not yet well understood. The minimal research that has mentioned competence or relatedness in the sport injury rehabilitation context has been of a narrative or qualitative design. Competence regarding the rehabilitation plan, procedures, and the injury itself has been rated as a key component affecting rehabilitation adherence in surveys of athletic trainers and athletes (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993).

Relatedness appears more frequently in the literature. The relationship between an athlete and athletic trainer is believed by both parties to be of particular importance to produce proper adherence levels (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993; Tracey; 2008). Moreover, it is frequently recommended that athletic trainers attempt to create a positive rapport with their athletes to elicit appropriate rehabilitation behaviors (Covassin, Beidler, Ostrowski, & Wallace, 2015; Tracey, 2008; Wagman & Khelifa, 1996). None of the aforementioned studies in which competence and relatedness surfaced were focusing on those aspects of SDT. Instead, the studies were examining what may affect rehabilitation adherence (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993), psychological factors of sport injury rehabilitation (Wagman & Khelifa, 1996), and caregivers' roles in assisting injured athletes' psychological well-being (Tracey, 2008). This emergence of SDT constructs unprompted by researchers or research design may indicate a strong SDT influence in the sport injury rehabilitation context. Overall, prior work acknowledges the importance of competence and relatedness with respect to rehabilitation motivation and adherence, but falls short of determining how they influence the process. Further, the SDT constructs of competence, autonomy, and relatedness have not been examined simultaneously in the sport injury rehabilitation context. Therefore, utilizing a theoretical approach with SDT can provide additional insights that the current, largely atheoretical literature lacks.

Another shortcoming of current research on sport injury rehabilitation motivation and adherence is the lack of qualitative data. The rehabilitation process is a unique and complex undertaking that necessitates more qualitative study to better understand the

determinants of and issues with a rehabilitation program (Ohman, 2005; Podlog, Banham, Wadey, & Hannon, 2015). In the limited work that has been done, recreational athletes have identified a lack of motivation as an issue in adherence to home-based rehabilitation (Levy, Polman, Nicholls, & Marchant, 2009; Pizzari, McBurney, Taylor, & Feller, 2002). Physiotherapists (the term used in place of athletic trainers in Europe and Australia) have reported that while some athletes under-adhere to prescribed rehabilitation programs, some athletes may be excessively motivated and perform additional rehabilitation tasks that have not been prescribed (Niven, 2007). Proper levels of motivation were also identified as a key component in rehabilitation adherence in a qualitative study interviewing five certified athletic trainers (ATCs) averaging nearly 15 years' experience (Seeberg, in preparation).

In sum, SDT appears to have merit for examining motivation to adhere to a sport injury rehabilitation program. Autonomy, a primary construct of SDT, has been shown to significantly predict rehabilitation intentions and autonomy support augments motivation to adhere (Chan & Hagger, 2012; Levy, Polman, & Borkoles, 2008). Competence and relatedness have been repeatedly described as important to rehabilitation adherence by athletes and athletic trainers (Covassin et al., 2015; Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993; Spangler et al., 2008; Tracey, 2008). However, no studies of a qualitative design have investigated any motivational theory's association with sport injury rehabilitation adherence. Aside from the study by Levy et al. (2008), what athletes perceive as motivational to their rehabilitation is unknown. Further, it is unclear what methods ATCs may utilize in the athletic training room to regulate athletes' motivation.

Therefore, it is the purpose of this study to, through semistructured interviews and observation of athletic training rooms, ascertain the perspectives of college athletes and ATCs on how SDT may relate to adherence to a sport injury rehabilitation program. The research questions guiding the study are as follows: How do self-determination constructs relate to athletes' motivation to adhere to a sport injury rehabilitation program? To what extent do ATCs employ SDT-related methods to regulate athletes' motivation? How do athletes' self-reported reasons for their actions compare to ATCs' perceptions of the athletes' reasons? The anticipated benefits of such a study are three-fold: increasing depth of knowledge of how SDT constructs affect sport injury rehabilitation adherence, the ability to compare athlete and ATC viewpoints, and ultimately uncovering how to more frequently achieve proper levels of adherence to sport injury rehabilitation programs.

CHAPTER II
EXTENDED LITERATURE REVIEW

Adherence to Sport Injury Rehabilitation Programs

Research on the topic of adherence to sport injury rehabilitation programs has increased significantly over the past two decades. Adherence refers to the extent to which injured athletes perform the rehabilitation tasks recommended by their supervising rehabilitation professional. Beginning primarily with the landmark study by Weiss and Troxel (1986), considerable research has been conducted on the concept of adherence. Psychological factors (level of self-motivation, pessimism), situational factors (convenience of rehabilitation setting, rapport with rehabilitation professional), and injury characteristics (severity, prior injury history) are all hypothesized to play a role in adherence. As a result, a model has been created incorporating many of these factors in an attempt to predict both adherence to a rehabilitation program and the outcome of the rehabilitation (Wiese-Bjornstal, Smith, Shaffer, et al., 1998). Further research on adherence has indicated that nonadherence to rehabilitation programs is a common phenomenon (Brewer, 1999; Fisher, Domm, & Wuest, 1988; Taylor & May, 1996). Moreover, excessive or superadherence to rehabilitation regimes has also been uncovered as an issue that may detract from proper adherence (Frey, 2008; Niven, 2007).

Subsequently, many researchers have attempted to determine the factors affecting whether an athlete is likely to adhere to the rehabilitation process in an effort to predict adherence, alter adherence levels when necessary, and ultimately return athletes to their sporting arena as quickly and healthily as possible.

Much of the recent influx in research on this subject has stemmed from the work performed by Weiss and Troxel (1986). The area of sport injury rehabilitation research was virtually nonexistent at the time Weiss and Troxel (1986) began their investigation. Therefore, the study began with a review of literature on stress and injury to establish pertinent factors potentially relevant to the sport injury rehabilitation process. Several situational factors such as timing of an injury and perceived external pressures were identified. Further, personal factors such as trait anxiety, self-esteem, and self-motivation were also found to play a role.

Following the review of injury and stress management literature, Weiss and Troxel (1986) endeavored to determine how the aforementioned situational and personal factors manifested themselves during the rehabilitation process. The researchers interviewed ten athletes and asked them to identify common pitfalls of the rehabilitation process. These athletes provided numerous consistent responses: negative self-talk, emotional distress, physiological symptoms apart from the injury (i.e. insomnia, fatigue, loss of appetite, etc.), and a perception of an inability to cope with the injury.

Ensuing research after the work performed by Weiss and Troxel (1986) attempted to uncover additional factors related to the sport injury rehabilitation process. For

example, Fisher, Domm, and Wuest (1988) investigated factors that athletes reported as increasing their adherence to a rehabilitation program. Injured collegiate athletes (n=41) were recruited and their adherence to a clinic-based rehabilitation routine was assessed in conjunction with their responses to a questionnaire addressing their perceptions of self-motivation, pain tolerance, effort, and several other potentially adherence-related factors. The results indicated that four separate determinants were significantly related to adherence levels: high self-motivation, high perceived rehabilitation effort, high pain tolerance, and fewer issues with the clinic rehabilitation setting. These determinants, largely intrinsic in nature, maybe able to be augmented by a sport psychology consultant or athletic trainer well-trained in the psychological aspects of sport injury and rehabilitation.

Expanding upon the previous study, Fisher and Hoisington (1993) and Fisher, Mullins and Frye (1993) performed additional studies via questionnaire. In both studies, a questionnaire targeting potentially important factors to the adherence process was utilized. One study obtained athletes' responses (Fisher & Hoisington, 1993) whereas the other study gathered responses from athletic trainers (Fisher et al., 1993). In the study in which athletes' responses were obtained, many factors were believed to influence the adherence process by at least 75% of the athletes. Some of these factors included good rapport with the athletic trainer, understandable explanation of the rehabilitation regimen, consistent presence of the athletic trainer, high self-motivation, and knowledge of long-term benefits (Fisher & Hoisington, 1993). Many of the athletic trainers' responses mirrored the answers from athletes. At least 75% of athletic trainers believed athlete self-

motivation, good rapport, clear explanation of the rehabilitation regimen, and consistent presence of the athletic trainer were among the factors that were able to positively influence adherence (Fisher et al., 1993). Collectively, these findings suggest that athletic trainers' and athletes' perceptions coincide on many key factors that may affect adherence levels.

Adherence has also been examined with a recreationally active group of participants. Fields, Murphey, Horodyski, and Stopka (1995) recruited 39 recreationally active college students and examined a variety of factors that they believed may impact adherence to a rehabilitation program. These factors included perceived social support, self-motivation levels, scheduling issues, perceived exertion, pain tolerance and clinical environment. The participants were categorized into adherers and nonadherers.

Adherers were defined as attending at least 75% of their rehabilitation sessions and scoring at least a 12 (moderate effort) on the Athletic Trainers' Perception of Athlete's Effort Scale (ATPAES). An analysis of independent *t* tests revealed that adherers and nonadherers differed significantly on three factors such that those more likely to adhere to a rehabilitation plan had higher pain tolerance, higher self-motivation and fewer scheduling concerns than their nonadhering counterparts (Fields, Murphey, Horodyski, et al., 1995).

Though adherence can potentially be increased by regulating many of the factors described above, superadherence, or performing excess rehabilitation exercises or activities, has also been recognized as a noteworthy issue. Frey (2008) conducted a brief

review of the issue of superadherence, chronicling potential dangers of adhering too much such as excess fatigue which can lead to re-injury. The author also suggested several methods to avert superadherence. These methods included educating athletes about the risks of performing more than the prescribed amount of rehabilitation and finding alternative activities for the athlete to redirect his/her energies. Superadherence also emerged as a theme in a qualitative study by Niven (2007). The author interviewed nine physiotherapists about the nature of rehabilitation adherence, and superadherence emerged as a theme from roughly half of the participants. In addition to the qualitative work by Niven (2007), qualitative research by Seeberg (in preparation) also produced the theme of superadherence. All five certified athletic trainers (ATCs) interviewed mentioned superadherence- hypothetically caused by extremely high levels of motivation- as an issue that surfaced during their work with rehabilitating athletes. Though not perceived to be a problem for a majority of athletes, superadherence is another concern within the setting of sport injury rehabilitation.

Compliance in Other Helping Contexts

Research on adherence to rehabilitation programs outside the realm of sport injury has also produced findings applicable to the sport injury rehabilitation context. However, terminology in these adjacent fields can be very different. One primary difference is the usage of the term “compliance” in lieu of adherence. The term “compliance” can be perceived as implying a lack of the ability to choose on the part of an individual undergoing rehabilitation. In the field of psychopathology, for instance, inpatients can be

forced to comply with a medicine rehabilitation regimen (Perkins & Repper, 1999). This phenomenon of perceived (or actual) lack of free will may well be why the term adherence is used more often within a sport injury context. Even studies utilizing the term compliance within a sport injury setting, such as a landmark study by Taylor and May (1996) that will be discussed later, are cited in numerous sport injury studies examining adherence. Regardless of the reasons involved, research employing the term compliance with respect to a rehabilitation program has been mainly limited to the medical and psychopathological fields.

Seckin and colleagues (2000) performed one such study in the medical field concerning compliance to an exercise regimen for osteoarthritis patients. One hundred and twenty patients were prescribed an exercise intervention, gradually increasing in intensity over three months to ease their symptoms. Overall compliance was quite high, at 85% after the full three-month intervention. Somewhat surprisingly, patients with higher levels of disability and pain were found to comply significantly better to the exercise routine, as were patients who had been suffering from the osteoarthritis for longer periods of time. One may surmise that the individuals who were in greater pain and suffering for greater lengths of time had reached a point at which the pain was too severe or had been occurring too long and were willing to commit to higher levels of compliance than their less disabled counterparts. This phenomenon may have been particularly noticeable if the participants felt some level of relief at the outset of the exercise regimen, prompting an increase in motivation to adhere.

The previous study examined physical factors related to compliance, but many studies also attempt to find psychological or emotional factors affecting compliance. Taylor, Barber, McIntosh, and Khan (1998) tested the effects of depression on compliance in patients recovering from a heart attack. A total of 245 participants were given a survey and a depression inventory during their hospital stay and again three months after their heart attack. The survey was intended to measure compliance to any and all programs referred or recommended by the attending doctor for each participant. Depression scores were not significantly different in those patients who complied with their doctor's recommendations as compared to those who were less compliant. However, individuals who required rehospitalization within the three-month period were significantly more depressed than those who did not require another hospital stay. The researchers hypothesized that such depression may be caused by high anxiety levels concerning the injury and subsequent rehabilitation. Athletes may be susceptible to similar anxiety that could negatively impact their adherence to a rehabilitation program.

Psychological factors of the patients are a key potential determinant of rehabilitation adherence, but characteristics of attending medical professionals may also be related to patient's level of compliance. Kim, Kaplowitz, and Johnston (2004) looked at the effects of empathy from a physician on patient compliance. The researchers administered a questionnaire to 550 participants designed to examine the concept of patient-perceived empathy. A patient's perceived empathy from an attending physician is hypothesized to be comprised of three components: the doctor's ability to understand the patient's point of view, the doctor's ability to be able to relate that understanding back to

each patient, and the skill of improving the patient's emotional state by responding to the patient's current affect. Results demonstrated that the participants felt that their physician's affective ability (improving the patient's emotional state) was of the highest importance and significantly predicted compliance. The participants' compliance was also significantly predicted by increased perceptions of the physician's level of expertise. These findings directly relate to the athletic training room environment. If athletic trainers are able to demonstrate a high level of athletic training skill while simultaneously empathizing with each athlete emotionally, the chances for compliance to the rehabilitation process may be greatly improved.

Thus far, each of the studies in this section has been from the medical field; however, psychopathology, as it relates to compliance, has also been examined. Within the mental health and psychopathology context, compliance, specifically compliance with a medication regimen, is a delicate matter as it can be forced upon patients. Perkins and Repper (1999) critically examined many of the methods by which practitioners attempt to increase compliance. The nature of compliance in the field of mental health was made more complex by the passage of the 1983 Mental Health Act. This legislation has allowed medications to be forced upon inpatients of psychiatric wards and hospitals. An overarching theme of the current review was that forcing patients to take the medication was not perceived by many patients as the most effective route. Several current and former inpatients stated that practitioners and psychiatrists had downplayed a drug's side effects and praised its benefits seemingly to coerce compliance from their patients. These patients felt as if their medical professionals ignored the fact that they were adults who

may access the internet or other sources where accurate information may be available. Many patients reported doing their own research on the drugs they take and being surprised and upset that negative side effects were either downplayed or ignored completely by their doctors. This distressing realization led many patients to resist compliance to their medication regimens. Though athletic trainers cannot force athletes to comply with the rehabilitation process, the message to be taken from the field of mental health is simple: Inform the athlete-patient. Inaccurate, misleading or withholding information from patients may be detrimental to rehabilitation compliance.

Motivation and Adherence

As multiple factors that potentially relate to sport injury rehabilitation adherence have been discovered, researchers have begun to focus on specific components, and one such component is motivation. Motivation has been identified in several of the previous studies as a factor related to adherence (Fisher, Domm, & Wuest, 1988; Fisher & Hoisington, 1993; Weiss & Troxel, 1986). Moreover, as research on motivation in rehabilitation settings has expanded, multiple reviews on the subject have been conducted (Maclean & Pound, 2000; Siegert & Taylor, 2004). These recent reviews illustrate the perception of the importance of motivation and its impact on the rehabilitation process.

In some of the initial research targeting motivation and its impact on sport injury rehabilitation adherence, Duda, Smart, and Tappe (1989) examined motivation with personal investment theory. Briefly, personal investment theory is interactional in nature. The theory assumes that each individual's beliefs and perceptions interact with situational

factors to produce varying levels of investment. Personal incentives, perceived options, and sense of one's own beliefs are theorized to be the three primary determinants of motivation. Therefore, if an individual believes strongly in what s/he is doing, dislikes other options and perceives high levels of personal incentives, then the individual's motivation for that specific task will be very high. Duda and colleagues (1989) recruited 40 college athletes who had suffered injuries requiring at least three weeks of rehabilitation. This three-week rehabilitation minimum was intended to ensure sufficient time to determine rehabilitation adherence levels. Adherence was measured with three separate indices: attendance, completion of each exercise protocol, and level of exercise intensity as rated by the supervising athletic trainer. Though the personal incentive variables predicted a nonsignificant percentage of the variance in adherence (4%-8%), several sense-of-self and perceived-behavioral-option variables significantly predicted adherence measures. Results demonstrated that self-motivation, athlete's knowledge of the treatment regimen, and perceived social support predicted a significant percentage of all three measures of adherence. When combined, the three aforementioned factors were able to predict between 36%-52% of the variance in adherence indices. Several other factors, including trait sport confidence, sport task involvement, and internal locus of control significantly predicted at least one adherence measure. These findings begin to underscore both the complexity of the adherence process and how motivation may affect that process. Further, these results identifying the importance of perceived behavioral options and sense of one's own beliefs partially support personal investment theory as a framework for continued study of motivation in the context of sport injury rehabilitation.

There are myriad theories that have been proposed to explain motivation, and a primary theory used in the context of rehabilitation is the protection motivation theory (PMT). Revised in 1983 by Maddux and Rogers to include self-efficacy concepts, PMT is comprised of two main components: threat appraisals and coping appraisals. Threat appraisals made by the athlete include the severity of the injury as well as the athlete's perceived susceptibility to re-injury or further harm. Similarly, coping appraisals also consist of two separate appraisals: the athlete's perception of treatment efficacy (ability of the prescribed rehabilitation to heal the injury) and his/her self-efficacy to perform the rehabilitation correctly. An increase in any of the four appraisals is theorized to correlate to an increase in the athlete's adherence to a rehabilitation program. PMT was specifically designed for any rehabilitation adherence context and has been researched in the medical field in addition to the field of sport psychology (Grindley, Zizzi & Nasypany, 2008).

Due to its design for a rehabilitation context, PMT has received much research attention. Taylor and May (1996) were among the first to apply PMT specifically to sport injury rehabilitation. To assess PMT components, the researchers developed the Sports Injury Rehabilitation Beliefs Scale (SIRBS). Containing 19 items, the SIRBS has five items each measuring an athlete's perceived severity of an injury and susceptibility to further injury, four items each measuring the athlete's perceived treatment efficacy and self-efficacy to perform the treatment, and one question measuring the value an athlete places on completing rehabilitation correctly. Interestingly, this study was conducted with respect to home-based rehabilitation only. It has been suggested that the mere

presence of a physician, physiotherapist, athletic trainer, or other professional can enhance adherence (Fisher & Hoisington, 1993). Therefore, without the presence of a rehabilitation professional, the constructs of protection motivation were hypothesized to play an even larger role.

Scores on the 19-item SIRBS, along with athlete ratings of compliance levels, were gathered from 62 student-athlete participants at a British university. To clarify, though most rehabilitation studies use the term adherence to refer to rehabilitation behaviors, the present study used the term compliance. These scores were then analyzed in comparison with ratings of compliance by each athlete's physiotherapist. Of the 62 total participants, just 23 (40%) reported full compliance to prescribed rehabilitation activities and only 25 (46%) complied fully with the amount of rest prescribed by their physiotherapist. Further analysis revealed a significant positive relationship between perceived level of compliance with prescribed activities and perceived severity of the injury. Athlete-reported compliance levels of prescribed rest also increased significantly, but as a function of higher perceived susceptibility to further injury.

These findings are intriguing for multiple reasons. First, these results demonstrate the applicability of PMT to a home-based rehabilitation program. Also, these findings may be applicable by athletic trainers and physiotherapists to the sport injury rehabilitation context. If an athletic injury requires high levels of rest and recuperation, athletic trainers may be well-advised to highlight the increased vulnerability for further injury to get athletes to be fully compliant to resting procedures. Conversely,

if an injury necessitates aggressive rehabilitation strategies, making athletes fully aware of the severity of the injury may increase their compliance to the prescribed modalities of rehabilitation. Therefore, it appears that the type of injury may partially dictate the appraisals within PMT that an ATC should focus upon to enhance compliance.

Though a substantial portion of sport injury rehabilitation takes place outside the athletic training room, researchers wanted to supplement the findings of Taylor and May by adding the training room component. Brewer and colleagues (2003) performed a study with both home-based and clinic-based sport injury rehabilitation. In addition to using the SIRBS, the researchers developed a similar scale for rehabilitation practitioners to measure different aspects of adherence described below. This measure was deemed the Sport Injury Rehabilitation Adherence Scale (SIRAS) and allowed for greater variability in how adherence was defined rather than on a binary scale as simply compliant or noncompliant as in the study by Taylor and May (1996). The SIRAS asks athletic trainers to rate athletes' adherence in three ways: frequency of following instructions, intensity of completion of rehabilitation exercise, and receptiveness to changes made to the rehabilitation regimen. The researchers intercorrelated the two scales to examine the influences of protection motivation on adherence.

To minimize potential confounds, all 85 participants had suffered the same injury, an anterior cruciate ligament (ACL) tear. As a result, the levels of perceived threat, susceptibility, and efficacy were hypothesized to be more similar than observed in Taylor and May's work which included any injury requiring three or more weeks of

rehabilitation. Using a canonical correlation analysis, the results indicated that the SIRBS accounted for 43% of the total variance in the four adherence variables that were examined (attendance, home exercise completion, home cryotherapy completion, SIRAS). Further analyses revealed that higher scores on the PMT variables of treatment efficacy, self-efficacy, and susceptibility to further injury were all associated with increased levels of both home-based and clinic-based adherence. These three PMT variables had a moderate correlation score, on average, with the adherence variables (mean $r = 0.36$). Injury severity was not significantly associated with any adherence variables, a finding that differs from Taylor and May (1996). However, given the dual setting (home-based and clinic-based) of this study, these results both strengthen and broaden the relationships uncovered by Taylor and May.

Yet another theory of motivation that has been used to study athletes' rehabilitation is attributional theory. In short, attribution theory considers the attributional style or tendency of an individual. Attributions are divided into two dimensions: location (internal or external) and stability (stable or unstable). Internal attributions are considered to be caused by the individual whereas external attributions are perceived to be caused by factors outside the person. Further, stable attributions are believed by the person to be of a controllable, repeatable nature while unstable attributions appear to the person to be fleeting and not within his/her control. Laubach et al. (1996) used this theory to investigate athlete's attributions of their rehabilitation processes. Internal, stable attributions were hypothesized to be most beneficial to the athlete's level of adherence and, thereby, rehabilitation outcomes, and the results

confirmed this hypothesis. Athletes (n=34) and their primary rehabilitation caregiver (physical therapist or athletic trainer) were asked to rate speed of recovery for the athletes and athletes' attributional style was also obtained. Athletes who attributed their rehabilitation to internal, stable factors perceived themselves to be recovering significantly faster than athletes with all other attributional styles. Moreover, athletes with the aforementioned attributional style were rated as adhering significantly better and even recovering significantly faster by their attending athletic trainer/physical therapist. If attributional style can actually predict faster rehabilitation, then attribution theory may warrant further research.

More recently, self-determination theory (SDT) has been examined as an additional motivational framework that may be applicable to the sport injury rehabilitation setting. SDT is predicated on the assumption that human beings are motivated by three basic needs: autonomy, relatedness and competence. Higher levels in these three constructs will then lead to an increase in motivation to perform any given task (Deci & Ryan, 1985). Within the sport injury rehabilitation context, the construct of autonomy was largely ignored by researchers until a study by Levy, Polman, and Borkoles (2008). This study employed the SIRAS measure (Brewer et al., 2003) to obtain adherence data. Additionally, participants with similar injuries (tendonitis) were recruited to minimize potential confounds. Seventy participants volunteered for the study and were given the Health Care Climate Questionnaire (HCCQ) that is designed to assess perceived levels of autonomy support from the primary practitioner. The results demonstrated strong support for the role of autonomy-related motivation in sport injury

rehabilitation. Participants who scored higher on perceived autonomy support as measured by the HCCQ were significantly higher in clinic-based adherence (measured by the SIRAS) and overall attendance when compared to participants with low ratings of autonomy support. These significant results lend credence to SDT as one more viable theory of motivation with which to examine adherence in sport injury rehabilitation settings.

In summation, prior research has repeatedly investigated sport injury rehabilitation adherence through motivational theories, signaling the important role of motivation within the rehabilitation context. Further, motivation has surfaced as a substantial influence upon the sport injury rehabilitation process even when a research design has not specifically targeted motivation. In a study by Seeberg (in preparation), a qualitative design was utilized. Five certified athletic trainers (ATCs) were interviewed with the goal of revealing any characteristics of the athlete (patient) that may optimize compliance. Phenomenological in nature, the interviewer asked one broad question at the outset of the interview. No leading questions were asked and the researcher possessed no hypothesized themes before conducting the interviews. Subsequent questions were asked only to provide clarification of and expansion upon themes introduced by the participants. Despite receiving no cues from the researchers, all five ATCs mentioned motivation. In fact, motivation was such an omnipresent category that all three subcategories that surfaced within the concept of motivation (internal motivation, external motivation, and overcompliance or supermotivation) were also alluded to by all five participants. Though five ATCs is a very small sample, motivation was clearly

perceived as a key factor in maintaining an effective level of compliance. That strong presence of the motivation theme provides support for motivational frameworks to be employed.

Each of the three subcategories uncovered in the preceding study has been studied previously in the sport injury rehabilitation literature. The concepts of internal (sometimes labeled as intrinsic motivation) and external (extrinsic) motivation have appeared in multiple studies (Duda et al., 1989; Laubach et al., 1996; Levy et al., 2008). Internal motivation refers to an individual's desire to accomplish a given task coming from within. Conversely, external motivation is defined as an individual being motivated by extrinsic sources such as a championship or an individual trophy in the sporting realm. Further, the concept of supermotivation, defined as an excess of motivation that is potentially detrimental to a rehabilitation program, has been identified with both a narrative examination and a qualitative study (Frey, 2008; Niven, 2007).

Motivation and Sport Injury Rehabilitation: The Big Picture

To date, minimal research has been conducted with respect to the factors that may affect rehabilitation-specific motivation and, in turn, how that motivation may impact rehabilitation adherence. The concept of rehabilitation-specific motivation combines internal factors such as desire to return to play with external factors such as the ATC-athlete relationship and the motivational climate of the rehabilitation setting to form an all-encompassing construct of motivation within a sport injury rehabilitation context. One factor often reported as bolstering adherence to a rehabilitation plan is the quality of

the relationship between the athletic trainer/physiotherapist and the athlete. For example, in a pair of studies in which the same survey was given to collegiate athletes and athletic trainers, “good rapport and communication” between an athlete and his/her athletic trainer was reported as important for boosting adherence by 89% of athletes and 100% of athletic trainers (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993). In a qualitative interview format, athletic trainers and physical therapists have reported that rapport building is one of the most crucial aspects of their profession (Tracey, 2008). Attempting to build rapport with athletes is also a recommendation made to athletic trainers as a key component of providing a more effective sport injury rehabilitation program (Tracey, 2008; Wagman & Khelifa, 1996). Further, athletes and athletic trainers also have agreed that building trust and good rapport are crucial for effective communication, and often that rapport can be aided by engaging in non-injury related conversation to create a stronger relationship (Spangler, Blankenship, Leverenz, & Templin, 2008).

In addition to mutual acknowledgement of the importance of good rapport, athletes and athletic trainers seem to agree on several additional factors that they believe lead to proper rehabilitation adherence such as consistent presence of the supervising athletic trainer, clear description/understanding of rehabilitation tasks, and high athlete self-motivation (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993). However, the term “self-motivation” implies that motivation is strictly internal and that elements such as the rapport between athlete and athletic trainer, the presence of an athletic trainer, and all other aspects of the athletic trainer-athlete relationship have no impact on

rehabilitation-specific motivation. This subtle implication is further complicated by the fact that no research has attempted to identify how the athlete may impact his/her athletic trainer. Hypothetically, this dynamic may have several effects. It is plausible that an athlete's actions, attitudes, and progress within a rehabilitation program may alter athletic trainers' perceptions of the athlete and the rehabilitation program, thus changing the athletic trainers' behaviors within the rehabilitation context. In turn, these perceptual and behavioral changes may influence the rehabilitation-specific motivation of the athlete. In short, it can be argued that the concept of rehabilitation-specific motivation is far more complex than simply "high self-motivation" of a given athlete.

The aforementioned behaviors and perceptions of athletic trainers comprise just one portion of the motivational climate that may play a large role in determining the level of an athlete's rehabilitation-specific motivation. A motivational climate may be task (mastery) or ego (performance) oriented. Performance climates use competition with others to determine progress whereas a mastery climate involves measuring progress by examining effort, self-improvement, and proper technique (Ames, 1992b). The mastery climate is constructed to produce more positive psychological injury responses and, thereby, better rehabilitation outcomes (Brinkman & Weiss, 2010). Unfortunately, there is a dearth of research with respect to the rehabilitation motivational climate. One narrative article on the topic suggests that, parallel with research on motivational climates in sporting contexts, creating a mastery climate is potentially more effective than a climate based solely on performance (Brinkman & Weiss, 2010). However, several questions relative to the motivational climate of a rehabilitation setting still exist. Does

motivational climate impact an athlete's rehabilitation-specific motivation? Does the athlete, in turn, influence the motivational climate? How do clinic-based rehabilitation tasks and home-based tasks differ in terms of each setting's motivational climate? Does the climate of the athletic training room transfer to home-based rehabilitation tasks? A qualitative investigation with athletes and athletic trainers may begin to get at the nature of the rehabilitation motivational climate, how it fits into the context of rehabilitation-specific motivation, and perceptions of motivational climate held by athletes and athletic trainers.

Similar to motivational climate of the athletic training room, the concept of a motivational continuum is an intriguing idea currently unexplored in the context of sport injury rehabilitation. As previously stated, the idea of supermotivation has been addressed in qualitative and narrative-style research, but has not yet been addressed experimentally (Frey, 2008; Niven, 2007; Seeberg, in preparation). The study by Seeberg (under review) continues by hypothesizing that a motivational continuum may exist. The ATCs interviewed in the study seemed to agree that most rehabilitating athletes fall within an optimal range of motivation to successfully complete a rehabilitation program. However, athletes were reported to occasionally fall outside this optimal range; some athletes lack sufficient motivation (amotivation) and others possess so much motivation that they can ignore external cues such as athletic-trainer instructions or excessive pain. These supermotivated athletes may be a detriment to their own rehabilitation by performing extra, nonprescribed rehabilitation tasks, thereby not allowing the affected area to heal. A participant compared rehabilitating an injury to painting a wall, "You can

paint a wall as many times as you want, but you gotta let it dry at some point,” succinctly illustrating the issues that may arise with supermotivated athletes (Seeberg, in preparation). Further exploration of these two themes (motivational climate and motivational continuum) appears warranted.

Recently, the theory of planned behavior (TPB) has started to receive attention in sport injury rehabilitation literature. Though not directly addressing motivation for human behavior, TPB instead utilizes intentions of individuals as a primary means of determining their behaviors (Ajzen & Madden, 1986). TPB states that an individual’s intentions are the most accurate predictors of behavior. Intentions are theorized to be the result of perceived behavior control coupled with an individual’s subjective norm, comprised of two constructs: the individual’s attitude toward the behavior as well as normative beliefs, or perceived social norm regarding the behavior (Ajzen & Madden, 1986).

With respect to sport injury rehabilitation research, TPB has been used by itself and in conjunction with SDT. First, TPB was employed with a sport population recovering from ACL reconstruction surgery (Niven, Nevill, Sayers, & Cullen, 2012). Results showed that no TPB constructs significantly predicted rehabilitation intentions and these rehabilitation intentions were only predictive of adherence behaviors at two of the four time points (six and eight weeks post-surgery). These results led the authors to conclude that TPB is not a good fit for the sport injury rehabilitation setting (Niven, Nevill, Sayers et al., 2012).

Despite the findings of the previous study, TPB has demonstrated significant predictive power when paired with a prominent motivational theory, self-determination theory (SDT). Chan and Hagger (2012) developed two studies (reported simultaneously) and used each of the three TPB constructs (attitude, subjective norm, perceived behavioral control) to mediate the relationship between rehabilitation intentions (study one) or injury prevention behaviors (study two) and the autonomy construct found in SDT. With over 700 elite athlete participants across both studies, path analyses indicated that autonomy was significantly mediated by all three primary TPB constructs in both studies. In turn, autonomous motivation significantly predicted rehabilitation intentions as well as injury prevention behaviors. Even when the TPB mediators were controlled for, autonomous motivation significantly predicted rehabilitation intentions, signaling autonomy's sizable impact on rehabilitation. Though rehabilitation adherence behaviors were not directly investigated, the significant levels of rehabilitation intentions predicted lend credence to the utilization of TPB as a mediating influence on motivation for sport injury rehabilitation (Chan & Hagger, 2012).

How might each of the previously mentioned motivational theories explain how athletes' motivational levels are placed on the hypothesized motivational continuum? PMT states that all four appraisals need to be very high in order to be properly motivated to perform rehabilitation tasks; however, the concept of supermotivation, or doing too many rehabilitation tasks that may lead to re-injury, indicates that these appraisals may reach a point where they become too high. Personal investment theorists might state that if the athlete's perceived incentives for rehabilitation are high and options other than

rehabilitation are low then his/her motivation for rehabilitation will be very high. Again, however, the issue of supermotivation may present itself at the upper reaches of personal investment as investment can potentially become so high that athletes ignore external cues (unanticipated pain, ATC instructions, etc.) and perform too many rehabilitation exercises. Seemingly, many motivational theories do not consider the potential for high motivation to become detrimental to a rehabilitation program.

Conclusion

In summation, the issues of adherence and compliance pertaining to the sport injury rehabilitation setting are becoming increasingly well-documented and researched. Proper adherence to a rehabilitation program has been repeatedly demonstrated to lead to improved rehabilitation outcomes (Brewer, Van Raalte, Cornelius, et al., 2000; Derscheid & Feiring, 1987; Heredia, Munoz, & Artaza, 2004). Additionally, empirical evidence supports constructs from multiple theories of motivation when applied to the context of sport injury rehabilitation. Moreover, each theory has data suggesting that proper levels of the theories' respective constructs leads to either proper adherence levels or quicker recovery from injury (Brewer et al., 2003; Duda et al., 1989; Laubach et al., 1996; Levy et al., 2008; Taylor & May, 1996). These supportive findings indicate the critical role of motivation when undergoing rehabilitation of a sport-related injury, but the fact that such a wide variety of theories are supported by quantitative data presents an issue. Theories involving motivation that have been utilized in the sport injury rehabilitation setting (PMT, SDT, personal investment theory, TPB) have not undergone any examination from

a qualitative perspective to determine how prevalent the constructs may be throughout the progression of a sport injury rehabilitation program. Hypothetical constructs (motivational continuum, motivational climate) have also surfaced in recent literature that may warrant further investigation. Recently, a need for qualitative research within all rehabilitation settings has been identified to deepen our understanding of the processes, both physical and mental, that occur during the often arduous recovery from an injury or illness (Ohman, 2005). A qualitative study designed to give athletes and certified athletic trainers the opportunity to state what they believe to be the most important determinants of sport injury rehabilitation motivation may uncover what motivational constructs occur most often or are most crucial to the parties involved in the planning and execution of a sport injury rehabilitation plan.

CHAPTER III

METHODS

Research Questions

How do self-determination constructs relate to athletes' motivation to adhere to a sport injury rehabilitation program? To what extent do ATCs employ SDT-related methods to regulate athletes' motivation? How do athletes' self-reported reasons for their actions compare to ATCs' perceptions of the athletes' reasons?

Participants

Participants represented two separate NCAA universities, one a Division III institution, and the other a Division I school. Both schools had five ATCs on staff; however, the Division III school had 17 varsity sports whereas the Division I school had 15 such sports. The Division I school did not participate in football, creating a difference in the estimated number of athletes per institution with approximately 400 at the Division III school and 240 at the Division I institution. Participants consisted of certified athletic trainers (ATCs) on the university staff as well as collegiate athletes who sustained an injury requiring at least two weeks of rehabilitation before returning to play. Though there is no formal operational definition for what constitutes an athletic injury, two weeks of continuous rehabilitation is a benchmark for a moderately severe injury and has been

used in prior research (Chan & Hagger, 2012; Petrie & Falkstein, 1998). The shortest amount of time spent in rehabilitation by any athlete in this study before returning to full participation was six weeks. Concerning the ATCs, only certified athletic trainers were invited to participate, meaning no undergraduate or non-certified graduate assistant trainers were permitted. A total of six dyads consented to participation, four from the Division III school and two from the Division I institution, resulting in 12 total participants.

The six ATCs in the present study, three males and three females, had a mean age of 26.5 years and averaged 4.9 years' experience as ATCs (experience prior to obtaining certification was not included). Concerning the injured athletes, all four classes were represented with one freshman, one sophomore, two juniors and two seniors (mean age=20.3 years). Injuries included a partially torn posterior cruciate ligament (PCL) with a slight meniscus tear (5-6 week prognosis), elbow osteophyte (8-12 weeks), torn labrum (4-6 months), torn Achilles tendon (8-12 months), and two torn anterior cruciate ligaments (ACL) (9-12 months). Each of the six athletes in the study, two female and four male, also represented different sports: men's soccer, women's soccer, baseball, men's basketball, women's basketball, and wrestling.

Procedure

Initial contact via e-mail was made with the head athletic trainer at each participating institution. Once preliminary willingness to participate was confirmed, an in-person meeting with each head athletic trainer was arranged to describe the study in

further detail and establish participation. Each head athletic trainer provided a letter of support to be submitted with the IRB application. This process streamlined the IRB process by allowing one IRB to oversee the study instead of multiple institutions having an IRB involved. Once IRB approval was obtained, potential participants were contacted by e-mail as well as recruited via flyers (Appendix A) posted in and around the athletic training rooms of each university. Once an athlete sustained an injury severe enough to qualify for participation, the head athletic trainer contacted me. I then e-mailed the athlete and his/her ATC directly, outlined the study and obtained initial willingness to participate. The ATC-athlete dyad was required to remain intact throughout the process as that relationship is extremely unique. Just two people are responsible for the entirety of the rehabilitation process, meaning that nearly all factors affecting rehabilitation adherence can be ascertained from two individuals. When combined with my observations as an unbiased third party, a clear, rich, reliable depiction can result.

Once initial willingness was confirmed, I met with the ATC and athlete at the beginning of rehabilitation. Upon meeting with me, participants had the study described to them and informed consent was outlined, including permission from the participant to be observed and voice recorded and also informing participants that they may withdraw from the study at any time without penalty. After obtaining informed consent (appendix B), I arranged to observe three rehabilitation sessions of each dyad, one in or near the acute phase of rehabilitation, one towards the middle, and one nearing completion of rehabilitation. Attempting to observe one rehabilitation session in each of the three rehabilitation phases was critical as it allowed me to observe and record any potential

differences in the athlete or ATC that may be attributable to the phase of rehabilitation. Concerning my observations, I took field notes of the behaviors of the athlete and ATC as well as their interactions and verbalizations. I also recorded general field notes about the athletic training room, length of rehabilitation sessions, etc., but did not observe other individuals aside from their interactions with participants. These observations served as a source of triangulation for the data gleaned from participants during individual interviews and helped familiarize me with potential participants, a process that can aid in rapport-building during the interview process (Patton, 2002; Rubin & Rubin, 2012). These observations also provided unexpected insights that were queried in the formal, semistructured interviews. Observation of the setting and analysis of the subsequent field notes is recommended because it may produce information that is both unanticipated and relevant to the study at hand (Rubin & Rubin, 2012). As a result, minor alterations to the interview protocol were made as deemed necessary to obtain the richest and most accurate data possible for each distinct dyad.

Following completion of observations, research participants had a meeting arranged at their convenience to conduct their formal interview. All interviews took place in a private office on the participants' respective campuses and were recorded via audio-only recording devices. Anticipated to last approximately 35-45 minutes, the interviews were semistructured in nature and focused on components of SDT relative to the rehabilitation observations.

Interview Protocol

Each interview began by collecting demographic data (e.g. year in school, years' experience as an athlete/ATC, etc.). I then asked a general question about the participants' experiences with injury as an athlete or ATC to progressively work toward the desired information (for the full interview protocol, please refer to appendix C). This process is designed to build rapport by gradually deepening the level of information being elicited and has been shown to be an effective qualitative interviewing technique (Rubin & Rubin, 2012). A slightly more targeted question was scripted next about the present (or recent if rehabilitation is complete) sport injury rehabilitation process from the participant's perspective. Following this question, three questions were asked, one concerning each of the primary constructs of SDT: autonomy, competence, and relatedness. Probes were used multiple times between each of these questions to obtain sufficient depth and richness of data for analysis. For example, general probes such as "please tell me more about that" can produce further elaboration and clarification of relevant points. More specific probes were also utilized based on participants' responses. ATCs were asked to provide examples of how they have augmented an athlete's sense of control over the process (autonomy) or explained the purpose of a new rehabilitation task (competence). Athletes were asked to recall if any teammates offered support (relatedness) or if they were given input in designing some of the rehabilitation tasks (autonomy). Once participants appeared to have reached saturation points in their interviews, each participant was provided a brief summary of the information that had been conveyed and then given the opportunity to add anything else or expand upon

previously stated items before concluding the interview. A pilot study (appendix D), helped narrow the focus of the interview protocol for the present study. Additionally, for a full sample interview, please refer to appendix E.

Researcher Experience

I am currently a doctoral candidate in kinesiology with an interest in rehabilitation-specific motivation. The present research line began with a study in which I interviewed five ATCs to determine the ideal characteristics of rehabilitation-compliant athletes. Motivation was the omnipresent category of interviews, prompting me to continue investigating the role of motivation in rehabilitation adherence (Seeberg, in preparation). Pilot interviews conducted for the present study helped to create a more focused interview protocol for the current study. Additionally, I am engaged in applied sport psychology work and have consulted with numerous athletes during my doctoral studies. The ultimate goal of these efforts is to achieve certified consultant status as a sport psychologist by the Association of Applied Sport Psychology (AASP-CC). Relevant to the present study, this work has enhanced my ability to obtain pertinent information in a one-on-one interview setting. Concerning the content of the present study, I was uncertain of what would transpire. I have played multiple sports for over 25 years but not at the collegiate level, and I have only sustained one injury requiring more than two or three days of missed participation in sports. I did not have access to rehabilitation services for the aforementioned injury and have never experienced an athletic training room as an athletic trainer or an athlete. I believe many athletes at the

collegiate level identify strongly as athletes and a serious injury is capable of causing a loss of self-identity for those individuals. As a result, I believe an athletic trainer, like any caregiver, should be able and willing to treat the patient (athlete), not solely the injury; however, I had little understanding of the requirements of a collegiate athletic trainer or of the nature of a collegiate athletic training room setting prior to conducting this study.

Data Analysis

Fieldnote data were analyzed within 24 hours following each observation via open coding (Marshall & Rossman, 2011). Open coding was largely descriptive in nature and focused on only observable phenomena: description of the setting, actions and behaviors of the participants, verbalizations, etc. No interpretations of any observable data were made. Analysis was performed in Atlas.ti, a qualitative data software program. The program stored codes and linked them to passages they represented, codes that appeared nearby, and similar codes. Immediate analysis of the observational data was crucial to begin to understand the phenomena in this unique setting as quickly as possible. Further, the analysis helped shape the interview structure and also attuned me to the most salient events occurring during these observations to better inform future observations. For instance, a negative case dyad may be observed relative to other participating dyads. For the purposes of the current study, a negative case is interpreted as a dyad that exhibits interactions and behaviors disparate from other dyads. These behaviors may still lend support to components of SDT and their association with sport

injury rehabilitation adherence, but the dyad itself displays behaviors in stark contrast to the remaining dyads observed.

Concerning the formal interviews, each interview was transcribed verbatim upon completion and given back to the participant. This member checking process allowed the participant to check for accuracy and expand upon or clarify any statements, thereby increasing the level of data triangulation and validity of the data obtained (Marshall & Rossman, 2011). To protect privacy, pseudonyms were used for all participants and any names mentioned during the interviews, including names of schools. Once the transcript data was reviewed and confirmed by each participant, analysis of the transcripts began in the form of open coding consistent with Marshall and Rossman (2011). Following open coding, axial coding was then conducted to merge the data from observations and interviews into coherent categories. Once all the data had been coded and categorized, participants were invited to review the coded findings to provide an additional layer of triangulation. Lastly, an individual with sport psychology and athletic training expertise assisted by conducting a peer debriefing. This individual reviewed sample transcripts and coded data to check for consistency and accuracy of codes, thereby increasing the validity of the data.

Trustworthiness

To improve the credibility of the data obtained, multiple steps have been taken to increase trustworthiness throughout design and analysis. First, the study was conducted at two separate sites to increase generalizability. The dyadic format of the study was

critical as it provided two different perspectives (e.g., that of the athlete and that of the ATC) of the same events (three when combined with my observations). This allowed for better triangulation of the data, helping to ensure that individuals were truthful when responding as they had the knowledge that two other individuals were present during rehabilitation (Marshall & Rossman, 2011). The design of the study has two distinct data sources; combining observation data and interviews created better data triangulation. Observing the dyads three times over several weeks produced a rapport between myself and participants which may have led to more productive interviews (Rubin & Rubin, 2012). Observation data was also analyzed within 24 hours of the session while the events were most salient. This process allowed me to attune to the most relevant actions and behaviors within the athletic training room more quickly. Accuracy and thoroughness of the data was ensured by member checks. All participants were given copies of the transcripts and allowed to omit data and add or clarify any data as requested. Further, participants were also invited to review the coded data to ensure that the resulting analysis appeared accurate. Lastly, a peer debriefing procedure, conducted by an ATC with extensive sport psychology training, further confirmed the trustworthiness of the findings.

CHAPTER IV

RESULTS

To reiterate, the purpose of this study was to use SDT to ascertain college athletes' and ATCs' perspectives regarding adherence to a sport injury rehabilitation program. The research questions guiding this study are: a) How do self-determination constructs affect athletes' motivation to adhere to a sport injury rehabilitation program? b) To what extent do ATCs employ SDT-related methods to regulate athletes' motivation? c) How do athletes' self-reported reasons for their actions compare to ATCs' perceptions of the athletes' reasons?

Case Study- Sample Rehabilitation Session

To provide context, an example rehabilitation session is described in detail. This session took place at a Division III school in the southern U.S. The Division III college employs five ATCs and has a robust athletic training undergraduate program that allows juniors and seniors to assist in the athletic training room as student athletic trainers. The main athletic training room is approximately 40' by 20' with eight training tables aligned on the north wall separated into two groups of four by a side entrance. To the south is a 12' by 8' group ATC office partitioned off to create a larger space for athletes to perform rehabilitation exercises. This exercise room, approximately 12' by 20', contains two exercise bikes, an elliptical machine, a treadmill, a rack of freeweights, and various other

rehabilitation implements. In the northwest corner is an additional 10' by 15' room with two hydrotherapy tubs and miscellaneous storage.

The observed session involved Lisa, a women's soccer player recovering from a torn ACL, and Gwen, her athletic trainer with four years' experience as an ATC. The prognosis for this injury is 9-12 months post-surgical reconstruction of the ACL before returning to full participation. During this observation, Lisa was approximately 15 weeks post-surgery and early in phase three of her recovery. In phase three, the injured area is almost fully healed, swelling is much less prominent, and the focus of the rehabilitation becomes regaining strength and functionality of the affected area (Prentice, 2013). This was the third and final rehabilitation session that I observed with this dyad.

Lisa arrived several minutes early for this session, put her belongings on a training table and went immediately into the exercise room to begin biking. The training room was quiet with only two ATCs and a student athletic trainer present. No other athletes were in the room at the beginning of the session, which was unusual for this setting at this time of day. Gwen chatted with a student athletic trainer (AT) in the main training room while Lisa pedaled, listening to music on her phone. The student AT then greeted Lisa and showed her something on her phone at which both laughed. After approximately eight minutes of biking, Lisa grabbed a resistance band hanging on the wall before returning to her training table, accompanied by the student AT as both discussed how hot the training room was. Gwen joined Lisa and the student AT as Lisa

proudly stated that she did an extra two minutes on the bike to which Gwen responded sarcastically, “you must have actually done the full five minutes for once.”

After several minutes of mostly independent stretching with the resistance band, coupled with casual conversation with her student AT, Lisa is reminded by Gwen to do an additional stretch. Lisa performed the stretch while Gwen prepared a hydrotherapy tub for one of the three athletes who entered during Lisa’s stretching. A third ATC also entered the room. At the conclusion of the final stretch, Gwen listed four rehabilitation exercises to be performed in rotation. Lisa quickly began the first exercise in the main training room, watched closely by Gwen and the student AT; near the end, Gwen offered her a popsicle if she did an extra 15 seconds of the exercise. Lisa finished the exercise, including the additional 15 seconds, and then Gwen gave her the second exercise to do. She began this exercise, gave an exasperated sigh at the 30-second mark, and said, “a minute is too long!” “It’s just long enough,” responded Gwen. Lisa sat briefly at the end of the second exercise, then sighed again upon Gwen telling her the next exercise also had to be done for a full minute. Gwen demonstrated the third exercise, a lunge maneuver, to assure proper form before Lisa began, and then performed more repetitions simultaneously with Lisa to encourage her. This lunge exercise required Lisa to cover the length of the training room (40’) and back. Gwen also demonstrated the fourth exercise before Lisa began, then jokingly admonished her, “get lower!” during the movement. Lisa complied, finished the set, and asked for water.

Before Gwen returned with water, Lisa began her second rotation of the four prescribed exercises. Lisa grimaced and sighed frequently at the difficulty of the exercises and was watched closely by both Gwen and the student AT. Gwen provided verbal feedback and encouragement multiple times and all three individuals chatted intermittently. During this time, the training room became markedly busier as three additional athletes entered, including one who momentarily interrupted Gwen to ask a question. At the end of this second rotation, Gwen told Lisa, “all right, you get a four-minute break,” before heading over to the training tables to work with another athlete. During the break, Gwen twice checked with Lisa to see how she was while still working on another athlete approximately 25’ away.

With the session less than 40 minutes old, Lisa began her third rotation as another three athletes, along with two more student ATs, entered the training room. Lisa’s student AT supervised Lisa alone during the first two exercises as Gwen had gone into the exercise room to continue working with another athlete. Both the student AT and a teammate of Lisa’s gave her words of encouragement as she progressed. Gwen also clapped encouragement to Lisa while moving from the exercise room to a training table to work with her third athlete of the session. Beginning to tire, Lisa began to take noticeably longer between exercises during the third rotation, chatting longer with the student AT. Gwen returned for the final exercise of the rotation to perform several more demonstrative repetitions to get Lisa “lower” before leaving again to work with her fourth different athlete during the observed session.

Two more athletes entered the training room, bringing the total to approximately 12, as Lisa began her last rotation of the four exercises. Gwen returned and chatted with another ATC while watching Lisa. After struggling with a move, Lisa said with a smirk, “I think I’m developing asthma”, to which Gwen replied, “or you’re just out of shape.” On the last two moves of the rotation, Lisa jokingly attempted to stop the exercises while the student AT kept the stopwatch running. Lisa stopped to tie her shoe during lunges, then feigned beginning the final exercise multiple times. Neither tactic worked, but all three chuckled at the attempts.

Done with the rotation exercises, Lisa went into the hydrotherapy tub room to get more water before making her way to the exercise room where Gwen and the student AT were waiting. Lisa performed three sets of calf raises, watched closely by Gwen, before retrieving an ankle weight to complete another series of exercises. One other three-person unit (athlete, ATC, student AT) worked simultaneously in the exercise room. At the end of the ankle-weight exercises, Gwen stated that Lisa forgot one; however, Lisa had never executed that particular exercise. “Well, we’re gonna start,” responded Gwen, who first described the proper position before laying down beside Lisa to put her in the proper position and demonstrate appropriate technique.

At one hour into the session, Lisa finished the ankle-weight exercises and Gwen stated, “it’s knee-bending time.” Lisa returned to the main training room and laid on her stomach on a training table. The student AT began bending Lisa’s injured knee in an attempt to get her foot to touch her buttocks. The move is designed to test and increase

range of motion but is often painful. Lisa was less than two inches from full flexion and Gwen showed her the distance, “You’re literally this far away,” while encouraging her during each of the first three repetitions. After the third attempt, Gwen was interrupted by a teammate of Lisa’s to find a thermometer. Gwen promptly returned and took over the role of pushing Lisa’s leg. Before the sixth and final repetition, Gwen bartered with Lisa by offering her a second popsicle if she was able to touch her buttocks. Lisa’s teammate stayed to encourage her throughout the last repetition, and Gwen shouted encouragement as well, but Lisa was not able to touch her foot to her buttocks with still roughly an inch of space left.

As the forced knee flexion ended, the student AT prepared a cold compression device for Lisa’s injured knee. Used in lieu of ice, the cold compression device is a large, brace-like device that employs a compressor to pump frigid air through the brace to reduce swelling following rehabilitation sessions. Gwen returned with a popsicle for Lisa as the compression device began. The cold compression brace treatment takes 20 minutes which provided Lisa downtime to survey the training room and play with her phone as Gwen worked with her fifth different athlete. Near the end of the treatment, Gwen returned to schedule Lisa’s rehabilitation for the following day. An athlete at an adjacent table greeted Lisa and asked how her knee was. The athlete then asked Lisa, “Does this hurt for you too?” The question referred to the forced knee flexion that Lisa had just completed, and Lisa replied, “Oh hell yeah it hurts!”

Two minutes before the compression treatment ended, the student AT returned to Lisa's table and the two resumed chatting. At 20 minutes the device beeped and the student AT removed the device and put it away. Lisa gingerly hopped off the training table toward a table where Gwen was working with one of Lisa's teammates. After greeting her teammate, Lisa checked the time of her session the next day, Gwen replied, "9:30, can't wait!" and Lisa left. The session lasted 88 minutes.

Categories

Data from observations and interviews are triangulated in this section to best illustrate the events and behaviors observed and the participants' perspectives of what transpired in the athletic training room. Typically, the rehabilitation sessions observed lasted approximately 60-90 minutes. The shortest session observed lasted 35 minutes while the longest, which included 45 minutes of ATC-supervised strength training not directly related to the injury, lasted 145 minutes. Athletes routinely arrived several minutes prior to their scheduled appointment time, including one occasion where I arrived 20 minutes early to observe and found the athlete was already present. All interactions and behaviors of the participating athlete and ATC were observed and recorded once both members of the dyad had entered the athletic training room. With respect to the interviews, all were conducted individually. The interviews typically lasted 40 to 55 minutes with the longest at 58:56 while the shortest, at 32:33, was the only interview not to last at least 40 minutes.

Analysis of the entire data set revealed four categories: the ATC-athlete relationship, athlete relationships with nonparticipants, athlete autonomy, and ATC competence. Within each category, multiple interactions and behaviors were observed that supported and reinforced the presence of the category. The categories were tightly linked; multiple categories were frequently observed in concert or mentioned in one quote during interviews. Further illustrating the close-knit relationships that exist, an underlying theme of trust was associated with three of the four categories. The theme of trust will be discussed later. General impressions were also recorded after each session concluded; however, these inferences are not considered part of the data. Rather, these reflections were examined and compared across all observations to create a wider perspective from which to view the data set in its entirety.

ATC-athlete relationship. Predictably, events that displayed facets of the ATC-athlete relationship category were omnipresent throughout the observations. The most prevalent example of the ATC-athlete relationship was the sheer volume of conversation within the dyad completely unrelated to the rehabilitation itself. Achieving a sense of relatedness is an important psychological need and athletes were repeatedly observed relating with their ATCs through casual conversation. Athletes and their ATCs spoke about friends, sports (often the sport of the athlete's participation, but not exclusively), meals, classes, and a variety of other topics irrelevant to the injury or its corresponding rehabilitation. Jacob, a men's basketball player, held over a dozen distinct casual conversations with his ATC in one session alone. Mel spoke frequently with his ATC about food as well as baseball, his sport of participation. Another athlete, Kyle, was

markedly passionate about his sport of wrestling, chatting with his ATC habitually about practice, fellow competitors, Olympic wrestling, etc. Both Kyle and Mel appeared to greatly enjoy casual conversation; when no other individuals were present, both athletes engaged me in amiable banter multiple times in each of their three observed sessions. Overall, the six dyads engaged in friendly dialogue more often than rehabilitation-related conversation, excluding basic instructions from the ATC that did not require a response. Without the context of sport injury rehabilitation, many interactions within the dyad could be easily construed as conversation between good friends.

Another means by which athletes obtained their need for relatedness was through sarcastic exchanges. Participants were repeatedly observed sharing in the give and take of sarcasm towards each other, such as Gwen and Lisa in the sample rehabilitation session described above. Many exchanges between Travis (ATC) and Jacob carried a sardonic, mischievous tone. Jacob also displayed his playful nature by hiding the cell phone of the head athletic trainer and changing the ringtone. Additionally, sarcasm was a frequent tool used by Dale (athlete- men's soccer) and Andrea (ATC), particularly in sessions two and three as Dale began to know Andrea better and seemed to feel an augmented sense of relatedness as a result. Dale had known Andrea for less than three weeks prior to sustaining his injury. Comparatively, Gwen had been Lisa's ATC for three years before Lisa's ACL tear and Jacob had known Travis for over a year. Despite this disparity, all three dyads were able to exchange playful banter within the confines of their respective rehabilitation sessions. Often, a sarcastic exchange and encouragement from an ATC occurred within the span of a minute. Such a fluid rapport was observed

within many of the dyads as both parties seemed to value a strong relationship in the athletic training room. Overall, these lighthearted interactions, observed at least once in five of the six dyads, appeared to strengthen athletes' sense of relatedness with their ATCs and served to underscore the rapport that had been built between participants.

Coinciding with observed phenomena, the ATC-athlete relationship was a consistent topic throughout analysis of the interview transcripts. Omnipresent in all 12 transcripts, the ATC-athlete relationship appeared to be of vital importance to both parties and was the most commonly mentioned category. ATCs and athletes considered the dyad's relationship to be paramount to successful rehabilitation outcomes. Jacob stated a purposeful intention to build a sense of relatedness with his ATC:

I really go out of my way to make sure that I, you know, really talk to him early on, like really get to know him and, you know, what drives him and what his family's like. I just wanna, you know, have a good relationship with him.

Although one might expect the onus of relationship building to lie with the ATC, in this case men's basketball player, Jacob, recognized a value to be gained from developing a relationship and engaged in the proactive measure of creating a solid relationship with his ATC. Further, a baseball player, Mel, underscored the importance of the dyadic relationship, "But the overall process, well, I guess it's good to have a relationship... You don't wanna get up every morning and go see someone you don't like." Mel appears to be more motivated to attend his morning rehabilitation sessions due to his positive relationship with Donald, his supervising ATC. Men's soccer player Dale also found benefits to developing a solid relationship, "Now that we've built more of a

relationship...it's been even easier to just come in and like, 'Be honest, is your knee bothering you today?' There's no reason to lie." Dale described an ability to be honest as a result of a strengthened relationship. In general, athletes described themselves as being more motivated and more open when they had positive relationships with their ATCs. Clearly, athletes valued a sense of relatedness with the person they see most frequently in the athletic training room, their ATC.

ATCs were also keenly aware of the importance of a strong ATC-athlete relationship. Gwen (an ATC) illustrated the benefits of her relationship, "I've known her [the athlete] for three years. I see how hard she works in soccer, in practice, so I would hope to get that same kind of effort in rehab, and I think for the most part I get it." This quote demonstrates how advantageous an established relationship can be. However, if a preexisting relationship is absent, athletic trainers must often build the relationship between athlete and caregiver. One ATC, Donald, made a conscious decision to improve himself as a practitioner by establishing better relationships with his athletes by treating them as people rather than patients, "What's the point if the athletes don't really wanna talk to you? Like, how can I kinda make myself a better clinician...realizing hey, why don't we just talk, just be friends?" Donald appeared to understand athletes' need for relatedness, particularly during a challenging time rehabilitating a serious injury, and believed nurturing a positive relationship could help his athletes. Donald also echoed the sentiment expressed by Dale (an athlete) about the ability to be open and honest in a good relationship:

I need to know my limitations and say, 'Listen I'm not a total expert on this.' So, you know, him seeing me being...having a little bit of humility, saying, 'Hey I don't...I don't know everything but I'm gonna try to figure this out to the best of my ability,' enhances that rapport that we talked about.

Once the relationship is established, ATCs like Andrea notice a change, often for the better. As Andrea described it:

I remember, I think the first day I met him, he came in here before the season started and he had had stitches, um, under his eyebrow. And I was like, 'Cool, takin' out some stitches today.' And he was like, 'No offense, but I know (other staff AT) better.' So she took 'em out. So then I guess that might be why I figured we wouldn't have as good of a relationship, but, um, it's a preemptive thing I guess. But, I mean, he's very open. He'll let me know if he likes what I'm doing or if he doesn't. So knowing that he can say those kind of things to me or joke with me the way he does, um, and not be worried that I'll take offense to it or anything, I guess that shows the level of trust.

Similar to the perspective of Dale, her athlete, Andrea acknowledged that the relationship the dyad had built allowed Dale to be more honest and open, a product of the trust within their dyad to which Andrea alluded. Andrea continued by comparing her relationship with Dale to others that may not be as strong:

There's a lot of other athletes that I've worked with where, um, they don't necessarily understand that whole juggling process and the fact that you don't just work with that one athlete or that one sport...in the middle of the season or preseason for men's soccer or men's lacrosse, um, I'm not gonna have any time to work with people one-on-one. And people get used to working with you one way and then they, you know, have to suddenly change how you're working with them and how much face time you put in with them or how much hands-on they get. And, um, that can definitely cut back on that relationship or that bond.

Andrea seemed to appreciate Dale's understanding of the hectic nature of the collegiate athletic training room as was evident in the preceding quote. In sum, both parties within

the dyad recognized the importance of trust, openness, and understanding of each other in a strong ATC-athlete relationship.

Relationship changes. The preceding quote from Andrea demonstrates a change over time in the relationship between her and her athlete. Of the six dyads, Andrea and Dale were the only pair to display marked differences with respect to their relationship. These differences were revealed when comparing observations from each of their three sessions. Due to the severity of Dale's injury, phase three did not begin until nearly three months into the rehabilitation process, allowing 12 weeks for any changes in the dynamics of their relationship to emerge. For comparison, two of the dyads (Gwen and Lisa, Travis and Jacob) had known each other for at least a year and had well-established rapport. The three remaining dyads (Jill and Amanda, Donald and Mel, Bradley and Kyle) had not known each other for more than a few months. However, Mel and Kyle did not sustain injuries as serious as Dale's. Mel was out 8-12 weeks and Kyle was sidelined for three to four months, far less than the 9-12 month diagnosis for Dale's torn ACL. Amanda sustained a serious injury (Achilles tear) but she represents half of a negative case dyad that will be discussed later.

Interview data further illuminated the changes that occurred within Dale and Andrea's relationship. At the outset of rehabilitation, Dale reported frustration relative to his condition, "Being out of training sucked. Not being able to train, but we were out there every day. It was like, 'Man, this is miserable.'" Dale also experienced negative physiological symptoms, "I lacked energy...because I couldn't exercise the normal

amount I did, so the endorphins weren't there for the first two months basically...just felt lethargic. I felt slow all the time." As his activity level increased, his frustration waned and the dyadic relationship began to grow, "Like I said, we didn't have much of a relationship, I think, at first. Uh, now looking at it, she's been fantastic. Uh, could not have done it without her." Summarily, Dale struggled at first but was able to accept the rehabilitation as a challenge:

After that initial push- that initial month or so- uh, you just, you constantly think about, 'When can I kick a ball? When can I play soccer again? What do I need to do to play soccer at a high level?' Um, and it's just determination. Like, almost, can I, within myself it's like a...it's like can I prove to myself that I can overcome this injury.

The three athletes who sustained less severe injuries did not report similarly high levels of frustration or physical symptoms. It is likely, therefore, that Dale's early tribulations, coupled with the newness of his relationship with Andrea, produced an initially questionable relationship. As Dale improved, he realized that Andrea had his best interests in mind, "And as I got more comfortable being around Andrea and, you know, realized that she had the same intentions I did that there was no reason to...withhold information. So that process got easier as the relationship got closer." Though Dale's rehabilitation was not complete at the time of his interview, both members of the dyad reported a strong, vibrant relationship that had been built in a matter of weeks, demonstrating a difference across time periods not observed in or reported by any other dyad.

Relationships with nonparticipants. Though the ATC-athlete relationship appeared critical to the success of the rehabilitation, athletes sought relatedness from their peers and coaches as well. These frequent interactions with nonparticipants comprise a second category. Many coaches entered the training room to speak with their athletes on multiple occasions, checking on their progress and lending their support. The bulk of the interactions between athletes and individuals not involved in the study occurred between participant and nonparticipant-athletes. Jacob, for example, seemed to know everyone in the athletic training room, chatting with teammates, women's basketball players, a volleyball player and the head athletic trainer in a span of less than 15 minutes. Described as a "social butterfly" by his ATC, Jacob displayed his sense of belonging in the athletic training room similarly in each observed session. Some athletes appeared to possess a loquacious persona, conversing with anyone within earshot. Kyle, a wrestler, appeared to enjoy conversation, frequently speaking with me during his rehabilitation sessions when nobody else was in the small exercise room at the Division III facility. Further, a sense of camaraderie amongst the athletes revealed itself as participant-athletes frequently spoke to teammates and all other athletes, irrespective of gender or sport. These interactions took on a variety of forms: casual conversation, checking on rehabilitation progress, commiserating about rehabilitation, and even encouragement during difficult rehabilitation exercises as seen in the case study with Lisa's teammate encouraging her to push through the pain of the forced knee flexion exercise. Regardless of injury severity, athletes enter the athletic training room for one reason: to receive treatment because their body is hurting or injured. Athletes tend to be strongly motivated

to return to play (Podlog, Banham, & Wadey et al., 2015; Seeberg, in preparation) and characteristically feel frustration at being forced to rehabilitate an injury. Finding a sense of support and relatedness from peers experiencing similar struggles appeared to provide a welcomed sense of reassurance for the athletes in the present study.

Contradictory to observations, relationships with nonparticipants did not surface as a category within interview data. Interviews revealed that the ATC-athlete relationship was of utmost importance to both halves of the dyad. Conversely, relationships with peer athletes or other ATCs were largely viewed as ancillary to the rehabilitation process and not associated as strongly with rehabilitation motivation or adherence. This finding mirrors previous research that suggests the ATC-athlete relationship is paramount to all other relationships within the athletic training room (Clement & Shannon, 2011).

Athlete autonomy. A third category that emerged during observations was athlete autonomy. At times, the participant athletic trainers closely scrutinized their athlete's movements and effort, usually during a new move or closer to the beginning of the overall rehabilitation plan (phase one). This high supervision level was observed in all six participant ATCs multiple times as they exhibited a high level of control over their athletes. However, ATCs often were unable to supervise for varying amounts of time due to a plethora of factors. ATCs were interrupted by athletes and other ATCs, worked with multiple athletes simultaneously, consulted with other athletic trainers and lost supervision of their participant-athletes. Donald was forced to take a phone call during a

session with Mel and also worked with two other athletes during that session. Travis was the only ATC in the athletic training room during two of Jacob's sessions, resulting in numerous disruptions from other athletes. In three separate sessions (two of which were those just detailed involving Travis and Jacob) an ATC was responsible for at least six total athletes including the participant-athlete, precluding the possibility of extensive oversight of any individual athlete. Regardless of the cause, athletes needed to function independent of their ATCs in each of the 18 total sessions observed. Athletes often appeared to relish this independence with the support and initial guidance of their corresponding ATCs. To illustrate, Jacob was given a list of exercises during a session with Travis and allowed to choose three of them to perform. With that support for his autonomy, Jacob chose three he liked and completed the exercises diligently. During several sessions, an athlete spent more time rehabilitating with no supervision than with their AT and in only one instance was an athlete observed not fully adhering to the instructions provided by an ATC that was unable to oversee the entire rehabilitation session. The nonadherent incident involved a negative case dyad that will be discussed later. This remarkably high level of autonomous function was vital for every athlete: Each athlete gave the impression of trusting in the ATC's instructions while the ATC relied on the athlete to properly execute the respective rehabilitation protocols.

Interview data largely confirmed the presence of athlete autonomy as a main category. Athlete autonomy reportedly required trust from the ATC as eloquently stated by Jacob, "'Cause of the relationship we have, there's like confidence and faith there. Like, if I know a drill and I know how to do it, he won't have to worry about it. That's

just the trust that we have.” A solid ATC-athlete relationship helped ATCs trust their athletes to perform much of their rehabilitation autonomously. Moreover, the preceding quote succinctly elucidates the interconnectedness of categories and themes, linking the ATC-athlete relationship, athlete autonomy, and trust with one sentence. Many athletes were also aware of their ATC’s need to be in two places at once and Jacob was, for one, willing to work autonomously to help his ATC, “I’ll be the first one to tell him, like, ‘Dude, you got all these people that you gotta watch over. Like, go ahead and do your stuff. Like, you know I got this.’” For Mel, his hectic schedule made seeing Donald every day difficult, but Donald provided much-needed flexibility, “He told me as long as it’s (AT room) open I can go in there and get ice if I need it...if I wanna stretch out a little bit, I can. It’s not an issue.” Furthermore, athlete autonomy was frequently mentioned in conjunction with the ATCs’ need to multitask in the athletic training room. Lisa relayed her understanding of Gwen’s hectic schedule:

If it was me observing myself, some people can handle it, and then some people can’t. Like, if I know, if I find her to be really really busy, I know that with the amount of time that I’ve been there, I can make up an exercise or I can do something that she’s already told me to do.

ATC interview data revealed a similar perspective regarding the presence of and need for athlete autonomy in the athletic training room. Every ATC mentioned the need to accomplish other tasks during their athlete’s rehabilitation sessions. Travis described this need to multitask and then expressed support for Jacob to function without supervision, “I feel comfortable with Jacob typically making responsible decisions and I can give him a little bit of leeway.” Gwen echoed her athlete Lisa’s thoughts about the

busy athletic training room, “Well, I feel I am very good at multitasking, and I think as an athletic trainer you kinda have no choice but to be a good multitasker...so luckily for me she is kinda easy on her own.” Evidently, Gwen views multitasking as a basic requirement of the profession, and athletes’ ability to function independently helps ATCs multitask more effectively. Lastly, Andrea supported her athlete’s autonomy outside of the rehabilitation sessions. Once Andrea’s athlete, Dale, was cleared to jog, she provided him the freedom to choose when and how much he jogged outside of the AT room:

He’s very good at listening to his body and knowing if something doesn’t feel good I should stop. And then if he’s sore the next day I told him, ‘That means you probably did too much, and just, you know, take a day or two off and get back to it when you’re feeling fresh.’ And so he sticks to that very well. But, what I allow him to do, within certain limits, he’ll go to the nth degree.

Collectively, athletes reported enjoying autonomy within their rehabilitation program and most ATCs attempted to support that autonomy whenever possible.

ATC competence. The final category gleaned from observation data is ATC competence. Though experts at their given sport, athletes are rarely experts at rehabilitation. The competence of their ATCs, therefore, is critical to a successful rehabilitation program. ATCs most commonly displayed their competence through instructions given to an athlete. During observations, instructions given by ATCs to their athletes represented the most common interaction across all six dyads. Moreover, every participant ATC explained various plans and exercises to their athlete beyond simple instructions. The ATCs often appeared acutely aware that athletes’ understanding of the reasons for performing certain exercises- while not performing others- may ease athletes’

concerns about the overall process. For example, Donald spent nearly 15 minutes with Mel and a student athletic trainer at the computer during a rehabilitation session. Donald was using a slow-motion video of Mel's throwing motion to explain which segments of the motion were most detrimental to his injured elbow. This detailed explanation provided Mel a better understanding of why he needed to complete his exercises exactly as prescribed. ATCs also demonstrated movements for their athletes; this typically occurred when an athlete was performing an exercise for the first time or if an athlete's form on a given movement was not correct. Bradley was particularly fond of demonstrating exercises and did so a minimum of five times in all three observed sessions. Lastly, ATCs also monitored their athletes' progress and informed them of their advancement. This occurred most frequently near the beginning of long rehabilitation programs with ATCs measuring range of motion or muscle size of the affected area relative to the matching healthy appendage such as in Jill and Amanda's first session in which Jill measured swelling and range of motion around Amanda's torn Achilles tendon. For more severe injuries, monitoring progress also took place later in the rehabilitation program as with Gwen and Lisa in the phase three session described in the case study section. In short, ATCs had myriad opportunities to display their competence in each session and provided competence support to their athletes throughout their respective rehabilitation programs.

Mirroring observational findings, ATC competence emerged as a prominent category within interview data. Similar to athlete autonomy, ATC competence was inextricably associated with the ATC-athlete relationship. Essentially, an athletic

trainer's ability to convey his/her expertise strengthened the relationship within the dyad. One means by which some ATCs seized an opportunity to prove their competence was by diagnosing the initial injury. Gwen, Travis, and Andrea were all present with their athletes when their injuries were sustained. All three reported correctly diagnosing the injury immediately on site and having that diagnosis confirmed by doctors. Travis also alluded to the injury incident in his interview as a critical moment in which he was able to prove his competence to his athlete. "If I'm able to look at somebody, give them a diagnosis, and then us have that backed up by diagnostic imaging...that helps everybody trust in me a little bit more." As previously described, ATCs frequently went beyond merely instructing their athletes by explaining the purpose of particular exercises or even demonstrating the moves to ensure athletes performed the activities correctly. Donald, for example, explained why he so thoroughly detailed Mel's throwing motion:

If I were to not explain anything to him and try to correct his throwing mechanics, strengthening his rotator cuff and he's...he's doing one of 'these' (lifts arm up and motions downward awkwardly), well that's just a compensation for a weak rotator cuff. So you're strengthening the muscles that you're not trying to strengthen, and that's...that can be detrimental.

Another ATC, Bradley, appeared to enjoy demonstrating exercises, and when probed about his demonstrative tendencies he stated, 'I like to show them kinda what I'm looking for... it's something more they can relate to, whereas if I'm just sitting there barking orders they're like, 'This guy probably can't do half the stuff he's making me do.'" Despite dissimilar methods, ATCs typically found the means to promulgate their competence.

Athletes largely concurred with ATCs relative to the high degree of importance placed on ATC competence for sport injury rehabilitation. Many athletes valued their understanding of what they were doing and why. For example, Mel described his ATC's willingness to explain things thoroughly, "He would explain to me what I needed to do, um, and how I needed to do 'em...he wouldn't just tell me to do something and not explain why." When prompted for an example, Mel, lifted his arm nearly as high as his head, then rotated it up and down while continuing in detail, "He would want me working this shoulder...but at the same time, he didn't want my shoulder to be up, he wants it down...to make my back stronger rather than my shoulder. So stuff like that." Ironically, this example exercise is the exact motion to which Donald referred to in his interview. In sum, both members of the dyad consistently acknowledged the importance of ATC competence to the ATC-athlete relationship.

Athlete competence. Athlete competence did not emerge as a main category during data analysis. However, it was observed relatively often as most athletes were able to perform rehabilitation exercises properly without constant supervision from their respective ATCs. One illustration of this phenomenon is found in the case study rehabilitation session as Lisa, separated from her ATC several times throughout the appointment, completed circuits of exercises correctly. Jacob and Travis had a similar arrangement. When Travis was busy, Jacob was given multiple exercises to perform independently before checking back in with Travis, and Jacob executed them well each time. The only notable exception to this trend was Amanda, a women's basketball player who comprised one half of the negative case dyad that will be discussed later. Though

not referred to consistently during interviews, athlete competence was mentioned often enough, when combined with observations, to merit status as a subcategory of ATC competence.

Though observation data displayed athlete competence somewhat consistently, interview data gave less support to the subcategory. SDT theorizes that a sense of competence, combined with autonomy and relatedness, produces optimal motivation to perform a given task. but athlete competence was mentioned infrequently by the participants relative to ATC competence. When athlete competence arose in interviews, it was typically in the context of athlete autonomy. As athletes were taught the skills and information needed to perform their rehabilitation independently, their competence within the rehabilitation context rose. To elucidate, this quote from Jacob was focused on his autonomy in the athletic training room, “I’ll be the first one to tell him, like, ‘Dude, you got all these people that you gotta watch over. Like, go ahead and do your stuff. Like, you know I got this.’” When focusing on his autonomous behavior, Jacob’s competence within the sport injury rehabilitation context also surfaced. This quote suggests that competence support from an ATC may be perceived as autonomy support by an athlete. As athletes’ knowledge of their own rehabilitation increases, their dependence on ATCs decreases and athletes require less supervision. From the ATC perspective, Andrea lauded her athlete’s ability to build competence quickly, “I don’t have to tell him things more than once or twice, which is really nice. So, uh, he’s very independent and, for the most part, I’ve been just pretty impressed with him going through the rehab process.” Again, a link emerged in the preceding quote between

competence support and perceived autonomy. Athlete competence was also helpful to keep an athlete interested in rehabilitation as Bradley spoke about teaching his athlete more innovative exercises to keep him engaged, “He enjoyed it because a lot of the stuff we did, he’s like, ‘I’ve never even seen that, or heard of this before.’ So, um, it was new, it was interesting, it was challenging.” Though the athletes in the present study appeared more focused on their independence than competence relative to rehabilitation, that competence was still a crucial piece to the puzzle that allowed their prized autonomy in the athletic training room.

Needs Integration

Three of the four main categories appeared to affect athletes’ motivation to adhere to a sport injury rehabilitation program. Given the lack of emergence during interviews, relationships with nonparticipants, though a common occurrence during observations, may not have as strong an association to sport injury rehabilitation motivation as the other three categories. Further, both athletes and ATCs reported multiple categories occurring simultaneously during rehabilitation sessions. More specifically, the ATC-athlete relationship was observed and described as concurrent with ATC competence and athlete autonomy. ATCs repeatedly checked in with athletes, ensuring they felt comfortable before allowing them to perform multiple rehabilitation exercises independently. Bradley often left Kyle alone for several minutes after demonstrating an exercise for him in the small exercise room adjacent to the main training room. Kyle typically stayed on task using the knowledge Bradley had conveyed and pushed through

difficult exercises willingly. In two instances, Bradley did not return after the demonstrated exercise was complete. Kyle used this time to do additional exercises, exemplifying Bradley's faith in him by executing a portion of his rehabilitation autonomously. Travis and Donald also gave their athletes multiple exercises to complete independently in each of the three observed sessions. This recurring pattern displayed the ability of a strong dyadic relationship to augment athletes' autonomy. Lisa, a women's soccer player, elucidated this integration of SDT constructs by describing her relationship with her ATC and how it allows for autonomy:

I feel like she can read that about me, that, you know, I like to do certain things on my own. And, like she literally is there enough to where, to make sure to say, oh, if I'm doing it wrong or if she wants me to do it like in a different way...and then sometimes she has other people that she has to take care of, too. So I know that, I'm understanding of that, and I'm fine with her giving me the assignment to do and just letting me go do it.

Lisa believes her relationship with Gwen provides her both relatedness and autonomy. Representing the other halves of the dyads, ATCs also reported that having a solid relationship permits more athlete autonomy. For example, Andrea described how her increased understanding of her athlete allowed her to support his autonomy, "If you feel like you can run three miles? Run three miles. He's very good at listening to his body and knowing if something doesn't feel good he should stop."

ATC competence, like athlete autonomy, was also frequently integrated with the ATC-athlete relationship. ATCs appeared to grasp the importance of proving their competence to their athletes. Bradley displayed his knowledge through frequent

demonstration of rehabilitation exercises and described how he believed that impacted the process, “They kind of trust you more. If you’re just sitting there telling somebody what to do and you’ve never done it before they might not trust you as much as someone showing them how it’s done.” Trust, which will be discussed later, is seemingly the vehicle by which ATC competence influences the ATC-athlete relationship. From an athlete’s perspective, assuring athletes perform exercises correctly also helps prove the ATC’s competence and bolsters the relationship, as described by women’s basketball player Amanda, “She watches me while I do it. So I like...I like when she tells me when I’m doing something wrong. That’s how I know I can depend on her.”

Negative Case: Jill and Amanda

Five of the six dyads appeared largely in sync during my observations and subsequent individual interviews. The athletes generally possessed a proper amount of motivation, ATCs provided appropriate information and autonomy to their athletes, and the ATC-athlete relationships were amiable and conducive to executing rehabilitation programs well. One dyad, however, demonstrated tendencies and reported perceptions in stark contrast to the remaining participants. The dyad in question consisted of Jill, an ATC with eight years’ experience and Amanda, a freshman women’s basketball player at a Division I school. The differences between this dyad and others began with the first observation. The pair rarely spoke of anything other than the rehabilitation itself, and that conversation consisted of the bare minimum required to convey necessary

information. Both individuals were soft-spoken and possessed calm demeanors; this combination produced a lethargic atmosphere within the dyad.

Beginning at 7:30 AM, the second session I observed was early in the morning as Jill had requested that Amanda come in early for individual attention. Jill then proceeded to supervise her closely throughout the entire session. This high level of supervision occurred again in the third rehabilitation session I observed; the aforementioned sessions are the only two in which an ATC did not work with multiple athletes. Further, there was an instance of direct subversion I witnessed Amanda perform. Jill gave her an exercise to be completed in three sets of 15, but the athlete only performed two sets as Jill had momentarily stepped away to retrieve an implement for the next exercise. It is possible that Amanda lost count, but she answered “yes” when Jill asked if she had done three sets, so the impression I garnered was an intentional lack of adherence. This impression was bolstered by Amanda’s repeated questioning of Jill regarding how many sets and repetitions of each exercise were required. Amanda asked more frequently than any other athlete, seemingly not for clarification, but rather hoping to hear a low number to make things easier.

The individual interview with Amanda largely confirmed her apparent struggles that were evident during observations. From Amanda’s perspective, rehabilitation was tedious, grueling, and often more arduous than she believed she was able to manage. Lacking a willingness to be challenged may be an issue as athletic trainers have previously reported that willingness to be an ideal component of the most adherent

injured athletes (Seeberg, in preparation). Amanda also engaged in catastrophizing during her interview, stating, “This is the longest goal ever,” when referring to the ultimate goal of returning to play. No other athlete mentioned similar perspectives in their individual interviews. Rehabilitation research has centered on pain catastrophizing and has shown it to impede recovery for recreational athletes (Baranoff, Hanrahan, & Connor, 2015). However, Amanda was more concerned about her future ability to complete the rehabilitation. No research has identified this type of catastrophizing in any rehabilitation context, perhaps because it is an atypical phenomenon characteristic of a negative case.

Following Amanda’s catastrophizing of the rehabilitation process, the interview took on a tone of wishful thinking. Amanda believed she had minimal control over the rehabilitation process and, as a result, doubted her ability to return to play fully recovered. “I just wanna try and make that end goal,” expressed a desire to achieve that goal, but not the belief that it could be achieved, nor the willingness to make that end goal a reality. Additionally, Amanda did report trusting Jill’s competence regarding the rehabilitation; however, Jill lacked sufficient trust in Amanda’s motivation to rehabilitate herself. Without mutual trust, both members of the dyad began to doubt Amanda’s ability to complete the rehabilitation program successfully. Amanda’s final statement in the interview summed up her self-doubt succinctly. When asked if anything else had impacted her motivation to adhere to her rehabilitation program, she responded, “Not really, just hoping to get back and play.” She hoped to play again, but lacked the

perceived ability to take charge and obtain her primary goal. Ultimately, her fears were realized as she did not return for her sophomore season.

Regarding the other half of the dyad, Jill provided valuable insights into the dyad's apparent lack of cohesion. Jill's initial impression of Amanda was negative. She reported that Amanda arrived on campus with poor conditioning and was required to do extra work to get into shape. Jill worked with her during these extra workouts and from that she gleaned, "Motivation was a big thing with her, like trying to keep her engaged and motivated and just not doubting herself. I knew those would be things that she would struggle with." When I asked for an example, Jill responded:

Um, I mean I spent a lot of time in the fall, voluntarily doing extra conditioning with her because she was out of shape and wasn't allowed to practice. And every day was difficult. Between pool workouts- it was all conditioning too- between pool workouts, doing stadiums outside, running on a treadmill, it was all too much work for her and she always just had a bad attitude about it. Like it literally got to the point where I told her I was done. Like, I was like, 'I don't wanna work with someone who isn't motivated,' because her teammates would come in asking for extra conditioning. Like her teammates would go in the pool with her and they were all excited and having fun, and she wasn't.

Even when probed for any positive example, all Jill was able to recall was when a men's basketball player entered the athletic training room and teased Amanda, causing her to perk up momentarily, but the positive response was short-lived. Instead, Jill recalled her 'pouting, huffing and puffing' frequently during exercises, something I often witnessed during observations. Further, when asked about the accuracy of the 'autonomy by necessity' phenomenon, Jill's response perfectly illustrated the dyad as a negative case compared to the others I had observed, "Yes, but I would say she's the exception... she

needs that attention because if you don't watch her, if you don't correct her she'll just, you know, she won't do what she needs to do." Again, trust proves itself vital to rehabilitation adherence. Jill's initial experience with Amanda caused distrust for the ATC. Amanda demonstrated a lack of motivation and self-belief which continued to manifest itself during rehabilitation and the lack of trust Jill had in her athlete festered. Jill also expressed concern over Amanda's potential inability to complete the rehabilitation at the outset of the program, "Initially, I figured it would go one of two ways: Either she's gonna come back and be the best she's ever been, or she's not gonna come back.". Those fears, similar to Amanda's relative to her ability to finish the rehabilitation, came to fruition. Lastly, when I asked how often she had encountered an athlete with this lack of motivation in her eight years as an ATC, Jill stated unequivocally, "Zero. Usually you have the ones who never wanna leave the training room at all and wanna do extra stuff...I've never had that the other way around."

Data and Research Questions

When examined collectively, the data obtained from both observations and interviews sheds considerable light on the research questions guiding the study. The primary question to be answered was how SDT constructs affect athletes' motivation to adhere to a sport injury rehabilitation program. Data suggest that fostering a positive ATC-athlete relationship is critical to that motivation as athletes may be more inclined to work for ATCs with whom they feel comfortable. Athletes reported more desire to attend rehabilitation sessions when working with ATCs they enjoyed being around.

Further, ATCs often purposefully build a relationship as early as possible. The second research question guiding this study is to what extent ATCs employ SDT-related methods to regulate their athletes' motivation. Purposeful rapport-building is one such technique ATCs reported utilizing to adjust athletes' motivation. In addition to building relationships, ATCs engaged in other methods to regulate motivation. For example, Donald related his approach to increasing all of his athletes' motivation by supporting their autonomy:

I can show him a few other exercises to add to it, make it more challenging then we'll do that. Makes a good home program for him too. I try and treat all my athletes the same way and say, 'I am here for you, I want to help you get better, but you have to want it for yourself.' So I try and make them all as self-sufficient as possible.

The third research question asked how athletes' self-reported reasons for their behaviors compared to their ATCs perceptions. The ATCs in this study typically had a keen awareness of their athletes' thoughts and emotions concerning the sport injury rehabilitation process. To illustrate, Lisa, a women's soccer player, described feeling bored at times during her rehabilitation then added, "I would never express that to her (ATC) 'cause I just feel like, I think that's just part of the process." Despite not directly stating her boredom, Lisa's ATC, Gwen, spoke repeatedly about her efforts to avoid monotony for her athlete, describing the process as "a challenge for her...and a challenge for me because I want her to stay engaged and motivated." Gwen continued her description, "I have a protocol to follow, but it's only a baseline and I pretty much have authority to do whatever I want within that realm. So if she's limited to certain exercises,

I can pick from whatever ones I want.” Clearly, Gwen was able to interpret her athlete’s thoughts and alter the rehabilitation plan to keep Lisa motivated throughout the process.

CHAPTER V

DISCUSSION

Themes

As previously mentioned, the three categories- ATC-athlete relationship, athlete autonomy, and ATC competence- all appeared frequently throughout observations and in the subsequent individual interviews. These categories are intertwined consistently, with two or three observed in a single instance during a rehabilitation session or mentioned in concert in an interview. In this section, I will provide a detailed description and rationale for the themes of trust and a previously unidentified phenomenon deemed autonomy by necessity.

Trust. Though the categories described in the results section appear to relate strongly to rehabilitation motivation, a concept outside SDT revealed itself consistently during data analysis: trust. Research on trust in the field of psychology has increased in the last two decades, providing a more nuanced understanding of the complex construct. Kassebaum (2004) defines trust as “an expectation about a future behavior of another person and an accompanying feeling of calmness, confidence and security depending on the degree of trust and the extent of the associated risk,” (p. 21). This definition is intended to refer to interpersonal trust between two individuals and, therefore, works well in the dyadic confines of the present study. Trust is often conceptualized as a behavioral

intention, a potential willingness to be vulnerable to another individual based upon expectations of that individual to perform a given task (Mayer, Davis, & Schoorman, 1995; Rousseau, Sitkin, Burt, & Camerer, 1998). By its nature, trust is a concept that is distinct from SDT, a global, individual theory of motivation. Trust is a dynamic process occurring between two or more individuals and its ever-changing qualities cannot be incorporated into any theory designed to interpret a single person's intentions. However, given the dyadic methodology of the present study, the emergence of trust as a preeminent theme is likely reflective of the unique approach to this study which was focused on the relationship between two individuals.

In the context of sport injury rehabilitation, much of that trust is centered upon perceived ability, a critical antecedent of trust (Mayer et al., 1995; McKnight, Cummings, & Chervany, 1998). Essentially, athletes must trust their ATCs' ability to create a rehabilitation plan and administer the resulting plan accordingly. ATCs, in turn, have to trust their athletes' ability to properly execute the rehabilitation program. An individual's ability to trust has been closely linked to subjective well-being (DeNeve & Cooper, 1998); however, athletes rate lower on well-being scales after suffering a major injury (Malinauskas, 2010). Recent research has shown that athletes' well-being during rehabilitation may be augmented if their needs for autonomy and competence- two of the three primary SDT constructs- are being met (Podlog, Lochbaum, & Stevens, 2010). A focus group study with student athletic trainers also briefly touted the merits of a trusting relationship between athlete and athletic trainer (Granito, 2001). When combined, the research on trust and SDT in the sport injury rehabilitation contexts suggests that trust

may be the crucial construct allowing autonomy and competence to flourish, thereby resulting in increased motivation and well-being for injured athletes.

Given the important role of trust, it is imperative to determine how it can be built in the ATC-athlete dyad. According to the participants in the present study, trust often develops as the ATC proves competence and the athlete demonstrates the ability to execute rehabilitation exercises. To illustrate, Travis, an ATC, discussed the effects of proving his competence by diagnosing the initial injury correctly, “If I’m able to look at somebody, give them a diagnosis and then us have that backed up by diagnostic imaging, then...that helps everybody trust in me a little bit more.” The belief that proving their competence increased athletes’ trust was a consistent theme in the interviews with ATCs like Bradley who spoke of the effects of demonstrating rehabilitation exercises for his athlete, “They kind of trust you more. If you’re just sitting there telling somebody what to do and you’ve never done it before they might not trust you as much as someone showing them how it’s done.” Athletes also valued their ATCs’ competence and reported that it increased their trust in the process. Mel, a baseball player, appreciated his ATC’s knowledge given the uncertainty of injury, “He knows what he’s talking about and it’s good, um, for a process like this, coming off of surgery.” In previous qualitative research, athlete trust in their ATC has surfaced as a key component of building rapport and also as important to return to play confidence (Podlog, Banham, Wadey, & Hannon 2015; Spangler, Blankenship, & Leverenz, et al., 2008). Trust as a primary theme in the present study coincides well with prior research.

Though athletes' trust is critical to the overall process, athletes comprise only half of the dyad. ATCs must also trust their athletes to perform rehabilitation correctly and to know their bodies well. Andrea spoke about her trust in her athlete's body awareness and how it helps rehabilitation adherence, "If you feel like you can run three miles? Run three miles. He's very good at listening to his body and knowing if something doesn't feel good he should stop." This quote also illustrates how an ATC's trust can allow for increased autonomy. Once her athlete was cleared to jog, Andrea allowed him to jog as much as he liked, trusting him to taper down the jogging if his injured knee became too sore. Andrea's athlete, Dale a male soccer player recovering from a torn ACL, expressed a similar opinion, "Now that we've built more of a relationship...it's been even easier to just come in and like, 'be honest, is your knee bothering you today?' There's no reason to lie." Andrea's trust in Dale to report honestly how his injured area felt clearly stemmed from Dale's trust in Andrea's competence and their established relationship. In short, trust must be a mutual, two-way street for effective rehabilitation adherence. Once the individuals possess sufficient trust in each other, the athlete readily accepts the ATC's competence concerning the rehabilitation and the ATC can grant the athlete the necessary autonomy to perform rehabilitation as prescribed.

A shared trust within both parties of the ATC-athlete dyad is a critical factor that allows athletes to function autonomously in the athletic training room. That trust appeared more crucial during many observations in which athletes were forced to function independently of their ATCs. The very nature of the two collegiate athletic training rooms prohibited athletic trainers from spending an entire 60-90 minutes with

one athlete. The ATCs were responsible for many athletes, typically one sport per season. For example, Travis was the ATC assigned to the men's basketball team at the Division I university, meaning he was primarily responsible for the care of each athlete (n=15) on that team. Moreover, during two observed sessions Travis was the only ATC in the athletic training room. Many athletes entered who required treatment before attending practices and as a result, Travis worked with up to eight additional athletes, not including the participant-athlete. This series of events appeared to be routine for all parties involved despite the high athlete-ATC ratio. Further, this example was not uncommon as two other athletic trainers worked with at least five athletes during an observed session. These conditions demand that athletes perform much of their rehabilitation autonomously while still adhering to ATCs' prescribed regimens. This phenomenon of essential autonomy occurred frequently enough that it emerged as a theme which I describe as 'autonomy by necessity'.

Autonomy by necessity. Autonomy by necessity was observed in all 18 sessions I witnessed. In all but two of the 18 sessions observed, ATCs worked with at least one other athlete. Both sessions in which the ATC supervised only the participant-athlete occurred within the same dyad. This dyad represents a negative case that will be discussed later. The remaining five dyads all demonstrated repeated instances in which ATCs worked with different athletes during the participant-athlete's rehabilitation session. A plethora of additional interruptions were observed: other athletes asking questions, other ATCs (or student athletic trainers) requiring assistance, participant-ATCs receiving phone calls, coaches asking questions, etc.

Observations of autonomy by necessity incidents were recurrent and, as a result, this aspect of rehabilitation was incorporated into the semistructured interviews. However, this modification rarely proved necessary as several participants alluded to the phenomenon before I had presented the phrase in the interview structure. Travis, an ATC, mentioned his desire to provide his athletes autonomy and work “hands off”, in his words, due to his large workload, “Hopefully that allows him (participant-athlete) to go through the process a little bit quicker...but also allows me to be able to multitask, which I need to be able to do more often than not.” Travis continued by describing his schedule that involved working with two teams (basketball and cross country) with overlapping seasons and also having to assist athletes preparing for daily practices. When I characterized the occurrences as autonomy by necessity, Travis responded, “Yeah, I think that’s pretty accurate. I would agree with that...because there’s just one of me and sometimes there’s six athletes in here that need attention, so I’ve gotta bounce around.” Another ATC, Donald, mentioned his need to multitask and, therefore, prepare his athlete to perform rehabilitation autonomously. When I introduced the term autonomy by necessity, he agreed it was an accurate characterization of how rehabilitation is often conducted in athletic training rooms:

That’s interesting, I’ve never heard that before. That’s good, I like that. By necessity, yeah that’s good...that’s very accurate. I mean I wanna do as much as I can, but I just can’t spend the time working with athletes who are doing rehab. I need to be able to show them what they can do and kinda empower them to do it themselves so that I can be where I need to be.

Multiple athletes also acknowledged their understanding of ATCs' inability to supervise their rehabilitation constantly. Jacob, a men's basketball player and Travis's athlete, indicated his awareness of his need for autonomy, "I actually have no problems with him focusing more on other people...there's days, weeks- two or three- when I just did the same thing every day. He doesn't need to look over my shoulder for all that." A women's soccer player, Lisa, had a long-standing relationship with her ATC and believed that fostered valuable insight:

I feel like she can read that about me, that, you know, I like to do certain things on my own. And, like she literally is there enough to where, to make sure to say, oh, if I'm doing it wrong or if she wants me to do it like in a different way...and then sometimes she has other people that she has to take care of, too. So I know that, I'm understanding of that, and I'm fine with her giving me the assignment to do and just letting me go do it.

When asked if the phrase "autonomy by necessity" was an accurate portrayal of her rehabilitation experience, Lisa responded, "I would say yes...some people can handle it (autonomy), and then some people can't. If I find her to be really, really busy I can do something she's already told me to do." The need for athletes to function autonomously was consistently evident in observations and interviews, and both parties to the dyad recognized the importance of athlete autonomy in the hectic setting of collegiate athletic training rooms.

Control versus autonomy. Within the theme of autonomy by necessity a subtheme emerged: control versus autonomy. During observations, athletes frequently performed rehabilitation exercises without ATCs' supervision. However, those

seemingly autonomous exercises were often completed only under explicit instructions from the athlete's ATC. Travis, Gwen, and Donald (ATCs) in particular were prone to provide their athletes a set of exercises to perform individually while they tended to other athletes or matters in the athletic training room. All six ATCs provided this opportunity for independence during at least one observed session, but despite both parties to the dyad reporting this as autonomy or autonomy support in individual interviews, the ATCs still possessed control over their athletes' actions. It appears that a continuum may exist with full ATC control at one end and full athlete autonomy at the opposing end. Jill (ATC) and Amanda (athlete), the negative case dyad, were far closer to the control end of the spectrum than any of the other dyads. Though that high level of control may have been a symptom of the mistrust Jill had for Amanda's work ethic and attitude, their dyad demonstrates that minimal athlete autonomy may negatively affect a sport injury rehabilitation program.

Though participants' perceptions of what constitutes autonomy or autonomy support may be inaccurate, athletes were still observed engaging in autonomous behaviors during their rehabilitation sessions. Several athletes such as Mel, Jacob, and Kyle were observed warming up on an exercise bike upon entering the athletic training room before seeking out their respective ATCs. Lisa and Kyle, while waiting for their ATCs to return with further instructions, performed additional exercises that had not yet been assigned but were part of their normal regimen. This autonomous behavior helped expedite the athlete's initiation of rehabilitation activities in the hectic athletic training room environment. Andrea (ATC) provided autonomy support for Dale by allowing him

to determine how long he jogged on the treadmill during his last session. That autonomy support carried outside the athletic training room as Andrea reported trusting Dale to jog on his own by listening to his body and stopping when appropriate. Other ATCs also supported their athletes' autonomy by different means. ATCs Bradley and Travis let their athletes (Kyle and Jacob) pick from a list of exercises during a rehabilitation session. Gwen (ATC) allowed Lisa to do "circuits" of exercises after Lisa requested to continue doing her exercises in that manner. The circuit exercises changed after every set, permitting Lisa to avoid the monotony she reported disliking earlier in her rehabilitation program.

As previously stated, based upon the inconsistencies between observations of controlling behaviors and descriptions in interviews of autonomous behaviors, athletes and ATCs appeared to have a misguided understanding of autonomy and autonomy support regarding rehabilitation programs. Multiple ATCs, like Travis, reported teaching athletes how to do exercises to allow them the ability to perform the exercises independently:

Early on in the process I'm trying to be, um, a little bit more explanatory of why we're doing some things and explaining why it's important for him to do certain exercises a certain way using good form and that type of stuff. And then as we would progress, I would tend to be a little bit more hands off and allowing him to kinda do some of that stuff on his own as he shows that he's proficient with it.

Though Travis perceives this explanatory process as autonomy support, it coincides more accurately with competence support, imparting knowledge to his athlete. Competence support, though important, still allows an ATC to control the athletes' actions whether or

not they are being directly supervised. Women's soccer player Lisa described a similar mistaking of competence support for autonomy support, "I like to do certain things on my own. And, like she literally is there enough to where...to make sure to say, oh, if I'm doing it wrong or if she wants me to do it, like a different way." The struggle for control versus autonomy was especially evident in Bradley and Kyle's relationship. As reported by Bradley (ATC), Kyle did not initially function well autonomously. Bradley was forced to "pull the reins back" as Kyle overworked his injured shoulder. However, Bradley felt that Kyle eventually found a proper balance of effort and body awareness, "I would let him have, pretty much, autonomy with his decision. If he's, 'That's kinda weird and sketchy and I don't wanna do that again. That's how I originally hurt it,' that's okay." However, Bradley also disclosed the following even after relating his trust in Kyle, "I mean only a few times, like once or twice I said, 'No, you shouldn't do this one.' And usually he was in agreement." Bradley was compelled to momentarily stifle his athletes' autonomous behavior to keep Kyle from injuring himself by pushing too hard, illustrating the give and take of control and autonomy in sport injury rehabilitation.

Despite some misconceptions of the definitions of autonomy and autonomy support, accurate portrayals of autonomous behavior and support did emerge during individual interviews. Bradley (ATC) spoke of his usage of his athlete's feedback, "I had constant feedback from him. I mean I'd ask him which ones he liked, which ones he didn't like... he would show me stuff that he needed or he thought he was lacking in." ATCs Gwen and Travis reported similar procedures, allowing their athletes to choose specific exercises they enjoyed. Mel (athlete) described the freedom given to him by

Donald (ATC) to come and go as necessary, “As long as it’s open, I’m allowed to go in there and I can get ice if I need it... if I wanna stretch out a little bit I can stretch out a little bit.” Donald summed up his beliefs on autonomy support succinctly, “They need to feel like they’re in control of their rehab just as much as I’m in control of their rehab. If they feel helpless, then it...what am I gonna do?” Whether erroneous or accurate, athletes’ perceptions of autonomy support has been shown to lead to better adherence in a sport injury rehabilitation program (Levy, Polman, & Borkoles, 2008). The perception of providing autonomy or receiving autonomy support may be just as critical as the actual behaviors. Regardless, athletes and ATCs seemed to echo similar beliefs. Providing autonomy to athletes helps both parties function better throughout the rehabilitation process; however, ATCs must also maintain enough control to keep athletes performing rehabilitation correctly and progressing properly.

Findings and Previous Research

The results of this study suggest that three categories affect an athlete’s motivation to adhere to a rehabilitation program: the ATC-athlete relationship, athlete autonomy, and ATC competence. All three of these categories- similar to the three inherent psychological needs of SDT- are prevalent in the analyses of both observational and interview data. SDT states that individuals will innately seek tasks that provide a sense of autonomy, competence, and relatedness (Deci & Ryan, 1985). The three aforementioned categories identified in this study coincide with SDT despite the fact that working with an ATC through a sport injury rehabilitation program is not a task an

individual chooses of their own volition. A fourth category, athlete relationships with nonparticipants, also surfaced as a category within the observational data, but not in the analysis of the individual interviews. Though interactions with other athletes- and to a lesser extent coaches and other athletic trainers- were common throughout the observations, most exchanges seemed to be of a friendly nature and not related to the rehabilitation taking place. The camaraderie that resulted from these frequent interactions appeared to be an aspect of rehabilitation that most athletes enjoyed and likely increased their feelings of belonging and relatedness within the athletic training room. However, these interactions were rarely mentioned during the interview process and, despite their ubiquity, may not be associated with athletes' motivation to adhere to their rehabilitation programs as strongly as the remaining three categories. This finding mirrors previous research suggesting that the relationship that athletes have with their supervising ATCs may have a larger influence on the rehabilitation process than relationships outside the dyad (Clement & Shannon, 2011).

As anticipated, the ATC-athlete relationship was the most prevalent category to surface in both observation and interview data. During the observations, I expected athletes to interact with their ATCs more often than any other individuals; however, the volume of these interactions was substantial. During one rehabilitation session, Kyle, a men's wrestler, engaged in 16 conversations with his ATC that were unrelated to the rehabilitation taking place. That session lasted just 45 minutes. These types of conversations have surfaced in previous research relative to rapport building, but their volume was not reported (Spangler, Blankenship, & Leverenz et al., 2008). The highly

diverse content of the conversations within the dyad was also not discussed in the sport injury rehabilitation literature. Despite these conversations taking place within the context of a sport injury rehabilitation session, many exchanges seemed like amiable conversations between friends. These casual interactions served a variety of purposes: building/maintaining the dyadic relationship, perpetuating a relaxed atmosphere, lengthening a respite between exercises, etc. Each participant acknowledged the importance of these interactions, a finding that coincides with prior research (Spangler, Blankenship, & Leverenz et al., 2008).

In individual interviews, athletes and ATCs confirmed these observations, consistently reporting that a solid relationship was crucial to an athlete's motivation to adhere to the rehabilitation process. During analysis of the transcripts, the dyads- with one exception that will be discussed later- continually echoed the thoughts and perceptions of their counterparts. The interviews were conducted separately, often on different days, yet both parties often shared identical views on the rehabilitation process. In one instance, Mel a baseball player, described a specific shoulder exercise that his ATC, Donald, explained in exhausting detail to assure the proper musculature was used. Donald then utilized *the exact same example* in his interview the next day without having spoken to his athlete. It was a striking illustration of how both members of a dyad can form a connection strong enough to perceive an event similarly despite serving in disparate roles.

The evidence linking strong athlete-ATC relationships and sufficient levels of rehabilitation motivation is consistent with SDT which predicts that a high sense of relatedness leads to increased motivation on any given task (Deci & Ryan, 1985). Many participants also stated that a primary function of a sound relationship is to build trust within the dyad. That trust provides belief for both individuals that each party will perform his/her tasks effectively. Prior research consistently recommends that all athletic trainers build a rapport with their athletes for more effective rehabilitation (Covassin, Beidler, & Ostrowski et al., 2015; Tracey, 2008; Wagman & Khelifa, 1996), and all parties in the present study reported similar perspectives. Additionally, athletes and athletic trainers have previously reported that building trust and rapport is critical, and engaging in casual, non-injury conversation is beneficial to the rapport within the dyad (Spangler, Blankenship, & Leverenz et al., 2008).

The second category that surfaced in both observations and interviews is athlete autonomy. Possessing a sense of control over the rehabilitation process was important to the athletes in this study. Higher levels of autonomy lead to increased motivation to perform a task (Deci & Ryan, 1985). The ATCs in the present study appeared to recognize that need for ownership to augment athletes' motivation and made concerted efforts to provide their athletes with the knowledge and skills to perform some of their rehabilitation independently.

Autonomy has received much less attention in sport psychology literature than the ATC-athlete relationship. Athletes who perceive higher levels of autonomy support also

adhere to their rehabilitation program at a significantly higher level, so ATCs serve their athletes well by encouraging autonomy (Levy, Polman, & Borkoles, 2008). Similar results have also been seen in rehabilitation settings not related to sport (Chan, Lonsdale, & Ho, et al., 2009). In concert, these findings illustrate the importance of autonomy support in an environment such as rehabilitation guided by a professional such as an ATC. The nature of such a program precludes autonomy from the outset. Concerning the present study, the participant-ATCs had numerous responsibilities in the collegiate athletic training rooms observed. Most worked with multiple athletes during every session I witnessed. This need to multitask is further rationale for ATCs to provide athletes with sufficient autonomy to perform rehabilitation tasks independently. During interviews, all six ATCs reiterated the need for athletes to function autonomously often in concert with describing their extensive duties in the athletic training room. However, no athletes mentioned any perceived lack of supervision or attention from their corresponding ATCs. That finding is likely due to the participant-ATCs' focus on providing autonomy support to make the athletes as comfortable as possible to perform rehabilitation on their own.

Chan and Hagger (2012) also addressed autonomous motivation relative to rehabilitation intentions in previous literature. In their study, autonomous motivation was found to significantly predict rehabilitation intentions. More central to the present study, perceived behavioral control and attitude toward the norm, two constructs of the theory of planned behavior (TPB), significantly mediated the relationship between autonomous motivation and rehabilitation intentions. By definition, autonomous motivation is self-

determined. However, perceived behavioral control (perceived autonomy) and attitude toward the norm may be influenced by ATCs. Supporting athletes' autonomy and creating an environment where effort and adherence are the standard may augment athletes' autonomous motivation, proper rehabilitation intentions, and ultimately lead to better rehabilitation adherence.

Athletic trainer competence is the final category to emerge from observations and interview data. The ATCs were observed utilizing a variety of methods to display their competence throughout the observations. Demonstrating rehabilitation exercises was a common strategy employed by many of the ATCs in this study. Most ATCs also appeared to understand that their athletes' may be inquisitive about their bodies, how they will react and what to expect during rehabilitation as described by ATC Andrea, "He asks questions, um, like I said, he wants to know as much as he can about what he's doing and what's going on with his body." As a result, many ATCs explained rehabilitation tasks in detail. This provided athletes with a better understanding of how to perform the exercises and how each exercise benefits the overall rehabilitation process. Additionally, the ATCs' ability to prove their competence increased athletes' trust in their ATCs which, in turn, augmented the athletes' motivation. ATC competence has been reported as a key element in rehabilitation adherence by both athletes and athletic trainers, but no research has directly tied ATC competence to athletes' motivation (Fisher & Hoisington, 1993; Fisher, Mullins, & Frye, 1993).

The uniqueness of the sport injury rehabilitation paradigm relative to SDT is perhaps most prominent within the category of ATC competence. SDT predicts that, in order to be properly motivated, athletes require a high degree of competence within any given setting, including sport injury rehabilitation (Deci & Ryan, 1985). Though Division I athletes are highly competent within their sport of choice, the athletic training room presents a different challenge. Athletes are not as concerned with their own competence in this setting as they tend to view injury as a temporary condition, something that must be dealt with swiftly and efficiently to permit a return to their sport. Obtaining a similar degree of competence for rehabilitation as for sport is not necessary. Rather, the athletes must trust in their ATCs' competence in terms of the ATCs' abilities and knowledge to guide them through the proverbial bump in the road.

In addition to the aforementioned categories, the themes of trust and autonomy by necessity were also uncovered. Trust has surfaced repeatedly in previous literature. Athletes' ability to trust ATCs has been reported to boost rapport and strengthen the ATC-athlete relationship (Granito, 2001; Podlog et al., 2015; Spangler et al., 2008). Many athletes in the present study reported increased trust as a result of a stronger relationship with their ATCs, so the relationship between trust and rapport within the dyad may be cyclical in nature. The second theme identified, autonomy by necessity, is a novel concept relative to prior research. Previously, autonomy support for athletes has been linked to better rehabilitation adherence and motivation (Levy, Polman, & Borkoles, 2008), but the reported need for autonomy within the often hectic environment of a collegiate athletic training room adds a unique factor that may warrant additional study.

Conclusion

Data obtained from the present study answers the pertinent research questions well. Autonomy, competence, and relatedness, the three primary constructs of SDT, were all observed to have an impact on sport injury rehabilitation motivation in the form of the ATC-athlete relationship, athlete autonomy, and ATC competence. The dyads were consistently observed conversing and displaying their relationships, athletes repeatedly performed tasks autonomously, and ATCs frequently explained rehabilitation tasks and demonstrated exercises to display their competence. Among the three categories, the ATC-athlete relationship appears most vital, permeating all observations and interviews. Next, ATCs reported engaging in multiple behaviors related to SDT to augment their athletes' motivation. Several ATCs intentionally supported autonomy for their athletes and took measures to improve athletes' competence regarding the rehabilitation program. Most ATCs were also observed partaking in purposeful relationship-building to bolster motivation. Lastly, perceptions of behaviors, cognitions, and emotions were similar within five of the six dyads. Generally, athletes and ATCs accurately perceived the intentions, attitudes, and behaviors of their counterparts within the dyad; only the negative case dyad reported consistent uncertainty and a lack of understanding of each other's attitudes and perspectives.

Two major themes were also uncovered. Trust, a critical theme, acts as a connective tissue among the categories. A relationship with excellent rapport and understanding of each other's needs builds mutual trust for both members of the dyad,

ATCs proving their competence provides additional trust for athletes, and a minimum threshold of trust must be reached before ATCs are willing to provide their athletes with autonomy over the process. Andrea, an ATC working with a men's soccer player, felt their high level of trust allowed more openness, "He's very open. He'll let me know if he likes what I'm doing or if he doesn't. So knowing that he can say those kinds of things to me...that shows the level of trust." Once an adequate level of trust is obtained, autonomy by necessity, the second main theme, can occur. Autonomy by necessity is created by the hectic nature of collegiate athletic training rooms as recounted by Travis:

Earlier in the day you're typically likely to see me juggling rehabs and then later in the day, early in the afternoon- pre-practice time- I'm more likely to be going back and forth with an athlete or two, and then responsibilities of getting practice set up for the day...because there's only one of me and sometimes there's six athletes in here that need attention, so I've gotta bounce around.

ATCs often cannot oversee their athletes continuously; therefore, athletes must be given sufficient autonomy to accomplish rehabilitation tasks without supervision.

In general, the categories and themes uncovered in this study coincide with prior research. The theme of autonomy by necessity represents a novel finding in the sport injury rehabilitation literature, as does the link between trust and components of SDT. Further, the study answers a call made for qualitative research in rehabilitation contexts by deepening the initial understanding of sport injury rehabilitation motivation and adherence (Ohman, 2005; Podlog, Banham, & Wadey et al., 2015). Participants represented two NCAA divisions and six unique sports. Within the six dyads a negative case was also identified; however, the small sample size is a weakness of the present

study. Future research should utilize similar parameters with a larger, more representative sample to supplement or potentially refute the current findings. A larger sample size may also allow researchers to control for injury type to reduce variability among participants, another shortcoming of this study.

Despite the limitations of the current study, several facets of the study create a worthy contribution to the sport injury rehabilitation literature. First, the design of the study (two data sources, two levels of member checks, utilization of both ATCs and athletes) provides much needed triangulation. The dyadic nature of the study, in addition to boosting validity of the data, is a unique contribution as no studies to date have followed intact dyads through a rehabilitation program for any length of time. Determining how ATCs and athletes operate in concert is crucial to creating more consistently positive rehabilitation outcomes and the present study represents an important step in that process. Additionally, observing each dyad on three separate occasions adds to the validity of the study's findings while allowing for examination of potential differences based on time or phase of rehabilitation. Lastly, though a small sample size, the sample is still relatively broad. The 12 participants represent six unique sports, two schools, and two different NCAA divisions.

Several future research paths can be examined based on the present study. Extending the dyadic structure of this study is of particular importance. A case study can be conducted with one dyad over the entire course of a lengthy rehabilitation to more closely scrutinize the nuances of the dyadic relationship. Recruiting more dyads for a

study similar to the current study is another logical future research direction. Relative to the study's findings, the theme of trust warrants further examination in future studies. Trust is not a component of self-determination theory, yet it emerged as a prominent theme, signifying its importance within the context of sport injury rehabilitation. Lastly, many ATCs reported intentional behaviors to augment their athletes' motivation and adherence with respect to SDT such as relationship-building and providing autonomy. For example, Donald conveyed, "I am here for you (athlete), I want to help you get better, but you have to want it for yourself, so I try and make them as self-sufficient as possible, show them how to do things." When probed whether this autonomy-providing behavior was deliberate, he responded, "Absolutely. I mean, they need to feel like they're in control of their rehab as much as I'm in control of their rehab. If they feel helpless, what am I gonna do? I just wanna help." Future research can build on these findings to identify specific behaviors every dyad can engage in to bolster the ATC-athlete relationship, athlete's autonomy, and mutual trust to ultimately improve adherence to all sport injury rehabilitation programs.

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APPENDIX A

RECRUITMENT FLYER

ATTN: Athletes and Athletic Trainers!

Your expertise is needed! A research investigation is being conducted concerning the nature of sport injury rehabilitation. We need 5-7 athletes and 2-4 certified athletic trainers (ATCs) to give us their insights on the sport injury rehabilitation process. You will be asked to take part in a one-on-one interview that should last no longer than 45 minutes. In this interview, you will be asked to draw upon your unique, firsthand experience of the sport injury rehabilitation process to provide the fields of sport psychology and athletic training with a deeper understanding of some of the inner workings of the entire rehabilitation process.

Athletic trainers wishing to participate must be certified (sorry, no student athletic trainers!). Also, athletes considering participation must have been injured significantly enough within the last two years (does not necessarily need to be while in college) to have needed at least two weeks of continuous rehabilitation before returning to participation. Additionally, athletes do *not* need to currently be an active collegiate athlete! Any Division I varsity athlete, current or former, may volunteer.

This study will be conducted on your campus. If you are interested or have any questions, please contact researcher Steven Seeberg at saseeber@uncg.edu or by phone at (937) 631-9903.

APPENDIX B

INFORMED CONSENT FORM

Consent Form for Research Participation

Project Title: A Qualitative Investigation of the Impact of Self-Determination Theory on Sport Injury Rehabilitation Adherence

Project Director: Dr. Jennifer L. Etnier
Seeberg

Student Researcher: Steven A.

Your Name: _____

This is a research project. The purpose of this project is to obtain information on what may occur during the sport injury rehabilitation process. You have been selected for participation because as an athlete/athletic trainer you have participated in the rehabilitation process and your first-hand knowledge is critical to potentially unlocking the inner workings of a sport injury rehabilitation program.

Should you agree to participate, you will be asked to participate in a semistructured interview that will be scheduled at your convenience. The interview is expected to last approximately 25-40 minutes and should not exceed one hour. This interview will be videotaped and transcribed. Once transcribed, you will be asked to review your transcript with the opportunity to expand on or clarify anything stated, and to remove any unwanted information. All information obtained in this study is strictly confidential unless disclosure is required by law.

Because your image will be potentially identifiable by anyone who sees the tape, your confidentiality for things you say on the tape cannot be guaranteed although the researcher will try to limit access to the tape as described below. The recording will be stored on a password-protected computer in a locked office. Only the project director and student researcher will have access to the recording. Once transcription is complete, deidentified, and accuracy is verified, the recording will be permanently erased. Further, any potentially identifying information stated in the transcripts will be altered using pseudonyms to protect your privacy. Lastly, a copy of your informed consent will be kept in a locked cabinet of the same office and, therefore, not accessible by anyone except the project director and the student researcher.

The benefits of this study are that it may help further understanding of sport injury rehabilitation. That information, in turn, can aid all athletes and athletic trainers identify specific factors within any given rehabilitation to tailor rehabilitation plans more effectively. To you, the benefits may include deepening your own understanding of the rehabilitation process through discussion of your experiences. Also, there are no costs to you for participating in this study, nor will you be compensated in any way.

The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. During the interview you may recall particularly challenging or emotional moments that may cause distress. These feelings are generally temporary; however, should you feel any prolonged distress, please contact the project director immediately at jletnier@uncg.edu or (336) 334-3037 or the student researcher at saseeber@uncg.edu. If you have any concerns about your rights, how you are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG toll-free at (855)-251-2351.

You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state. If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

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

Signature: _____ Date: _____

APPENDIX C

INTERVIEW PROTOCOL

Each interview begins with basic demographic questions such as age, year in school (athletes), sport of participation (athletes), and years of experience (ATC). Participants will then be asked, “Tell me a little bit about your injury history/your experiences as an ATC”. After a few minutes of discussion, participants will then be asked, “Can you speak a little bit about your experience with the sport injury rehabilitation process with (athlete/ATC; referring to the observed dyadic relationship that I have observed)?” At this point, participants may begin providing information salient to the present study. If this occurs, probes will be used for clarification, elaboration, and continuation of material presented by participants. Attentional probes, both verbal and nonverbal, will also be utilized throughout the process. If no themes relevant to the study are introduced, participants will then be asked, “what factors do you believe impact your/your athletes’ motivation to adhere to a rehabilitation program?” Probes will once again be used as necessary. To conclude the interview, I will provide each participant with a brief summary of the themes and topics that have been discussed, confirm their accuracy, and then ask, “are there any other factors that may impact your/an athlete’s motivation to adhere to a rehabilitation program?” This closed-ended question is crafted intentionally to allow the participants to conclude the interview if desired, but will not be asked until I believe participants have dutifully attempted to provide as much information as they are able.

APPENDIX D

PILOT STUDY

With the primary purpose of narrowing the focus of the dissertation, I conducted a pilot study in which I ascertained the viewpoints of both athletes and athletic trainers (ATCs) on the most prevalent factors that they believed may affect rehabilitation motivation. From the data gathered, it was an additional aim of this pilot study to aid in creating the interview protocol for the larger study to follow, presumably to focus on one or two of the most prominent motivational theories deemed worthy of further investigation.

Methods

Participants

The participants were divided into two distinct groups: ATCs (two) and current or former Division I athletes (one). The ATCs, both female, averaged 3.5 years of experience in the field, excluding pre-bachelor's degree practice. No student athletic trainers or graduate assistants were used. Further, the athlete, a female track and cross country runner, met the minimum injury history criterion of at least two consecutive weeks of missed participation due to injury within the past year.

Procedure

Participants were recruited via flyers posted in and around the athletic training room. Once initial willingness to participate was confirmed, a meeting was arranged in a private office of convenience to each participant. After informed consent was obtained

and all of the participants' questions were answered, the interview was conducted. Each interview commenced with the following question: "As an athlete/athletic trainer (this word was altered to fit the participant), you have firsthand experience with the process of sport injury rehabilitation. With that knowledge, could you please describe, in as much detail as you can, any and all factors that you believe may impact an athlete's motivation for his/her sport injury rehabilitation process?" Utilizing a single, broadly defined question is in the phenomenological style, which is believed to get closer to the essence of an interviewee's experiences than more commonly used interview styles such as structured or semi-structured interviews (Patton, 2002). Follow-up questions, such as "can you please tell me more about that," were used only to obtain clarification and elaboration of participants' responses. The interviewer introduced no themes throughout the interviews. All interviews were video recorded and lasted approximately 25-45 minutes.

Data Analysis

Upon completion of each interview, the video recordings were transcribed verbatim and the transcripts were then returned to the interviewees to check for accuracy and to allow participants the opportunity to expand upon or clarify any statements. Participants were also permitted to remove any data that they did not wish to be reported, were not identified by name, and any names that surfaced within the data were changed to pseudonyms. Qualitative analysis commenced in the form of open coding to identify all potential themes and was performed consistent with Marshall and Rossman (2011). Approximately 20 raw data themes emerged during open coding. Following open

coding, axial coding was then conducted, merging and organizing raw data themes into categories and subcategories. Experiential stories, as well as direct quotes, are used to illustrate categories and subcategories.

Results

Analysis of the transcripts revealed three primary categories. Each of these categories was supported by one or more subcategories. It should be noted that these categories and subcategories, listed in the table below, are not exclusively related. Many concepts are highly interconnected and the subcategories often occurred in conjunction with more than one primary category. For clarity, each subcategory is listed only in relation to the primary category with which it was most closely linked.

Categories	Subcategories	Sample Quotes
ATC-athlete relationship	ownership	
	Trust/understanding	
Athlete-patient individual differences	ATC adaptability/flexibility	
Sources of motivation	Intrinsic motivation	
	Extrinsic motivation	

ATC-athlete Relationship

The most salient category throughout data analysis was the relationship between the ATC and the athlete-patient. Every participant alluded to the ATC-athlete

relationship multiple times in their respective interviews. One ATC spoke of working with a team over an extended period of time to build that relationship, “You’re with the team all the time...so that they feel comfortable and confident in you as health care provider. And that openness and relationship, I mean, it’s why we love our jobs.” Unfortunately, according to the athlete interviewee, some teams do not always get the same trainer and that relationship building becomes more challenging, “We get, like, new trainers every, I guess, season, different trainers...I just think that’s strange...having a trainer to talk to that you’re comfortable with, I think that would help more.” Despite the disparity of circumstances, there appears to be a consensus among ATCs and athletes in this pilot study that building a solid relationship is a critical factor for proper rehabilitation motivation.

A subcategory that emerged within the ATC-athlete relationship is the concept of trust. Specifically, both parties seemed to believe that trusting the ATC to direct the rehabilitation program properly was a very important aspect. For instance, as the athlete stated, “I think that’s difficult because you don’t know if they are doing it right or, like, even if they’re still in school and I guess that’s always kind of frustrating.” Thankfully, this need to prove or demonstrate athletic training skills to the athlete is not lost on many ATCs, “Whether you like it or not, there’s a certain amount of convincing that has to go on in what we do, you know? Proving to...whoever you’re working with that you know what you’re doing.” Trusting the ATC and his/her skills, therefore, appears to be a key component of the ATC-athlete relationship.

Another important construct within the ATC-athlete relationship that surfaced during data analysis was ownership. If ATCs simply give athletes tasks to perform without allowing athletes any input, their motivation may not be as high as those athletes given the opportunity to assist in creation of the rehabilitation plan. One ATC referred to giving athletes ownership of the process at the immediate outset of the interview, “what keeps athletes motivated in their rehabilitation, that I find, is their ability to assist in development of their rehabilitation program, um, so they feel that they are an equal member in getting to the goal that they want.” This participant also alluded to “being a team with your athlete” during development of the rehabilitation plan. Another manner in which ownership and, thereby, the ATC-athlete relationship, can be augmented is educating the athlete on why certain tasks are assigned, “I think trying to teach something, teach someone why they’re doing something shows that they care.” Interestingly, the preceding quote was delivered by the athlete interviewee, not one of the ATCs. Both parties appear keenly aware of the importance of ownership to help build the relationship between athlete-patients and ATCs to ultimately bolster rehabilitation-specific motivation.

Athlete-patient Individual Differences

A second primary category that was developed from the data was individual differences with respect to each athlete-patient. Every athlete that comes into an athletic training room differs in some way. There may be personality differences, injury differences, demographic differences, etc., but regardless of the type of disparity, the

differences often impact the athlete's level of motivation. The ATC participants seemed particularly sensitive to individual differences of their athlete-patients. One ATC compared two vastly different athlete-patients:

She's squirmy. Like she can't sit still for *anything*...we would do a set and then it'd be like, she'd watch the commercial on TV...so I just know when she comes in, like, it's gonna be between an hour and an hour and a half for 45 minutes of rehab...but then I have a girl who, she wants to get in and out...and she's gone in, you know, 35 minutes...she wasn't there to socialize. She wasn't there to, you know, hang out...and to me, as long as they're getting in the work that they need to do...I'm okay with it.

This quote vividly illustrates just how different athlete-patients can be. Moreover, even the *same athlete* can behave differently from day to day, depending on mood or attitude. The athlete participant admitted to having off days that affected rehabilitation-specific motivation, "if I have a bad day or whatever and I'm just kind of like upset then it kinda...I would definitely lose motivation to wanna...go in the pool or something."

In an effort to effectively operate with different types of patients, ATCs must possess a high degree of flexibility and adaptability, which surfaced as a subcategory. Though not mentioned by the athlete, both ATCs expressed their mutual belief that adapting to each client's unique set of circumstances was crucial to maintain proper levels of motivation. One ATC mentioned techniques that are utilized when an athlete's motivation begins to wane, "to combat it, change your rehab. Challenge them. Allow them to do a little bit more that's sport-specific. So you have to, you know, give in where you can to keep them interested and keep them coming to rehab." The previous blocked quote, from the other ATC participant, also demonstrates that ATC's willingness to alter

her rehabilitation plans to fit the personality of each individual athlete. When prompted about those differences, the participant responded, “a lot of times you’re gonna have multiple people in there at the same time and if they see how you interact...it’s different. It’s directed towards their personality...you are doing things that fit their needs.” It appears, at least from the perspective of the ATCs, that their ability to alter rehabilitation tasks or plans is an essential method to promote rehabilitation-specific motivation.

Sources of Motivation

Essentially, athletes have two potential locations from which to draw motivation: within themselves or outside of themselves. When dealing with sport injury rehabilitation, these two locations are no different. Motivation from within an individual is known as intrinsic motivation, whereas motivation from outside is deemed extrinsic motivation. Occasionally, an athlete’s intrinsic motivation is not sufficient to perform rehabilitation properly, “if they don’t think they’re that good... ‘You know, nobody’s really gonna pay attention to me. Like, it doesn’t matter.’...they’re not gonna come into rehab and work hard.” In these instances, ATCs must attempt to provide external sources of motivation, regardless of the tactics necessary. As one ATC stated, “I’ve done push-up challenges with my athletes if I have to, but it takes their mind off of the fact that, ‘I’m not doing what I want to do.’”

Regarding intrinsic motivation, several potential motivation-producing mechanisms were mentioned by participants, including: quality of life concerns, desire to return to play, accountability, performance enhancement aspirations and even- somewhat

counterintuitively- fear of re-injury. According to the athlete participant, fear of re-injury can actually serve as a motivational tool to work harder and avoid becoming injured again, “It (fear of re-injury) helps because I want to get stronger and...am thankful for each run and stuff and I’m motivated to stay healthy.” Return to play, however, was a consensus factor among all participants. One ATC mentioned it immediately in her initial response to the research question, “Return to play is definitely the biggest one...that’s the biggest thing that I heard...in my experience is, ‘What do I need to do to get back to play?’” Further, participants cited a wide range of individuals that an athlete may be accountable to that affect motivation, such as coaches, teammates, the ATC and even family members. As the athlete participant stated, “I mean obviously you want to get better... for yourself, but also you wanna get better for your team and your coaches.” Regardless of the mechanisms that determine intrinsic motivation for each athlete, that level is critical in determining overall motivation for rehabilitation.

Similar to the mechanisms producing intrinsic motivation, a plethora of factors were believed to affect athletes’ motivation from outside their person. Some of the factors that comprised participants’ responses were: social support, rehabilitation progress, injury characteristics, scholarships or financial aid, and the ATC-athlete relationship. Regarding scholarship concerns, one of the ATCs had experience at both Division-III and Division-I levels, respectively, and witnessed significant differences, “you have the kids who’re like, ‘Eh, it’s not really that important,’ at the D-III level...(but at D-I) it’s almost like, ‘Well, I *have* to do rehab because I *have* to play next

year because I *have* to have a scholarship.” Charting rehabilitation progress, according to another ATC, has a positive impact on athletes’ motivation:

You create these minor, you know, mile markers to make sure that you keep reaching a goal. You keep feeling like you’re succeeding. You see that there is progress. You see the light at the end of the tunnel...and you just remind them, ‘you knew this was a long, uphill battle...and we’ve done this so far, so we’ve made milestones and we’ve made accomplishments.’

The preceding quote was in reference to athletes undergoing longer rehabilitation plans for more serious injuries and vibrantly illustrates how injury characteristics, rehabilitation progress and even an ATC’s adaptability can all influence rehabilitation-specific motivation.

Discussion

The results of this pilot study yielded varying levels of support for a variety of theories that have been utilized to examine rehabilitation-specific motivation. The most prominent category throughout the data analysis process was the relationship between the ATC and the athlete, a key concept that has been uncovered many previous studies (Fisher & Hoisington, 1993; Fisher, Mullins & Frye, 1993; Tracey, 2008). The ability to establish a strong level of relatedness, a primary construct of self-determination theory, appears to be important to both parties involved in the rehabilitation process. Concerning an athlete’s motivation, trust surfaced as a subcategory of the ATC-athlete relationship. Developing a sense of trust in the ATC-athlete relationship seems to be closely linked to motivation, as demonstrated in this short quote from an ATC participant, “The athlete is

more motivated, they also trust you.” Conversely, not developing that positive, trusting relationship can be cause for concern. When comparing relationships with coaches and teammates versus relationships with ATCs, the athlete stated, “you don’t really develop the same relationship with them...which I feel like you should. You’re putting a lot, I guess of your, I dunno, like trust into them, so I think that’s kind of troubling.” A second subcategory linked to the ATC-athlete relationship was the concept of ownership. Several passages demonstrated how ownership of the rehabilitation process can increase an athlete’s sense of autonomy, “if they have accountability to the program that they’ve created for themselves...they’re like, ‘Well I know how to do it. I helped come up with it, so I’m gonna continue to do this correctly.’” Autonomy has been previously identified within the context of self-determination theory as an influential construct in the motivation of rehabilitating athletes (Chan & Hagger, 2012; Levy, Polman & Borkoles, 2008). These findings appear to suggest that increasing ownership of the rehabilitation process via a strong ATC-athlete relationship may be a vehicle by which autonomy and, thereby, motivation can be augmented.

A second primary category in the present study is athlete-patient individual differences. Though athletes and ATCs have been surveyed as to the importance of athlete-patients’ personality differences (Fisher & Hoisington, 1993; Fisher, Mullins & Frye, 1993), no studies to date have qualitatively linked athlete-patient differences to rehabilitation motivation. According to the ATCs in the present study, each athlete brings a unique personality, injury, and injury history to the athletic training room. While discussing athletes with diverse post-rehabilitation goals (e.g. quality of life after sport,

return to play, etc.), one ATC neatly summed up athlete-patient differences, “the motivation from the get-go is different...whatever their goal is, you set it with them and you strive for it.” Moreover, even the *same athlete* may occasionally behave differently from one rehabilitation session to the next. This phenomenon, as described by the athlete participant, “if I have a bad day or whatever and I’m just kind of like upset then it kinda...I would definitely lose motivation to wanna...go in the pool or something,” hints at the complexity of the relationship that develops between an athlete and his/her attending athletic trainer. These individual differences serve to underscore the need for ATCs to be chameleons in the athletic training room, changing and adapting on a daily basis to accommodate athletes’ needs and regulate motivation.

The last primary category that was consistently salient was the concept of sources of motivation. Sources of motivation, according to the participants, can be either intrinsic (from within the athlete) or extrinsic (outside the athlete). Each of the three participants mentioned both intrinsic and extrinsic sources of motivation, further demonstrating the prominence of the category within the data. Concerning intrinsic motivation, the athlete-participant seemed to believe that it proverbially comes with the territory of being a competitive athlete, “If you really love something...you’re not gonna wanna just sit around and kind of feel bad for yourself. You’re gonna wanna do, like, what you can do to get better.” Interestingly, an ATC disagreed with this viewpoint by illustrating that intrinsic motivation varies regardless of level of competition. This ATC-participant went on to state that higher-level collegiate athletes do not always possess that high intrinsic motivation, “I had athletes at the D-III level who are *way* more motivated and passionate

about their sport and what they were doing than the kids I see (at the Division I level).” Despite these disparate remarks involving intrinsic motivation, all three participants seemed to acknowledge the presence and importance of extrinsic motivators such as scholarships, teammates and coaches and, perhaps most importantly, athletic trainers. An athletic trainer’s ability to regulate an athlete’s motivation through extrinsic sources may often keep athletes’ rehabilitation plans on track, “That goal (return to play) can seem so far away that you create these minor, you know, mile markers to make sure that you keep reaching a goal. You keep feeling like you’re succeeding.” Seemingly, the actual source of motivation is less critical than finding the proper level of motivation for an athlete to succeed in his/her rehabilitation, a concept well-illustrated by an ATC, “I’ve done push-up challenges with my athletes if I have to...there’s a lot of different motivations.”

Regarding previous literature on rehabilitation and motivation, several theories and concepts were supported by the results of the present study. For example, two aspects of self-determination theory, autonomy and relatedness, were expressed in the data as ownership of the rehabilitation process and the importance of the ATC-athlete relationship. Though ownership was tied to the ATC-athlete relationship most closely, several passages demonstrated how ownership of the rehabilitation process can increase an athlete’s sense of autonomy, “if they have accountability to the program that they’ve created for themselves...they’re like, ‘Well I know how to do it. I helped come up with it, so I’m gonna continue to do this correctly.’” Perceived incentives also seemed to play a large role as both quality of life and return to play concerns were mentioned as motivational incentives to perform well in rehabilitation. Components of PMT were also

evident as treatment efficacy as well as potential threats (fear of re-injury) emerged in the data. Additionally, the concept of a motivational continuum was also partially supported as all three participants alluded to instances in which an athlete lacked the proper amount of motivation as well as cases in which athletes possessed sufficient motivation. Each participant seemed less concerned with the type of motivation (intrinsic or extrinsic) utilized during rehabilitation and more concerned with whether or not appropriate levels of motivation were present. Supermotivation, however, was not mentioned.

Despite mostly supportive results relative to previous research, some theories lacked support from the results of this pilot study. Most notably, motivational climate was mentioned only very briefly by one participant (an ATC). Given this result, the hypothesized effects of the motivational climate on an athlete's rehabilitation-specific motivation may not be strong enough to warrant future research. In addition, a somewhat confusing finding revealed that, although competence as an individual athlete trait was supported by the data, self-efficacy with respect to prescribed rehabilitation tasks was not cited once by any participant. Competence, one of the three aspects of self-determination theory, was supported in the form of athletes' understanding of rehabilitation tasks and programs, as illustrated by the athlete participant, "if a trainer were to give me like a swimming workout, like I might do it, but not kind of really understand why I'm doing it, which I think doesn't help." In other words, knowledge of the rehabilitation tasks may be more important to motivation than perceived capability to complete a rehabilitation program. Lastly, no evidence was uncovered to support the notion that attributional style impacts an athlete's rehabilitation-specific motivation. Prior research on attributions in

the rehabilitation context focused on adherence and recovery speed, not motivation (Laubach et al, 1996); therefore, attribution theory may not be applicable to motivation in the sport injury rehabilitation setting.

In sum, this pilot study largely succeeded in narrowing the focus of the present line of research. To accomplish this, the interview question was intentionally worded broadly to allow participants to freely express their perspectives on what affects rehabilitation-specific motivation. In this regard, the pilot was successful. All three participants reached a consensus on the three primary categories, each mentioning every category multiple times throughout their respective interviews. Therefore, the three main categories that emerged (ATC-athlete relationship, athlete-patient individual differences, and sources of motivation) will provide a more focused lens with which to interview future participants. Relative to prior theories and research, SDT was the most prominent theory that surfaced in the interviews. Autonomy and relatedness, two of the three main constructs within SDT, appeared frequently in the data and were mentioned by all three participants. Competence, in the form of understanding prescribed rehabilitation tasks from an athlete's perspective, was also mentioned by each participant. Though several other theories were partially supported, these data suggest that SDT and its constructs are most relevant to the sport injury rehabilitation setting.

Now that pilot testing has narrowed the focus, the next logical step is to create a more focused interview protocol. Once created, the new interview should be utilized with greater numbers of collegiate athletes and athletic trainers. It will be the purpose of

the new study to interview ATCs and athletes at multiple institutions. This larger and more diverse sampling will provide a much higher degree of reliability to the study.

Using the information gleaned from the pilot data, interviews in the new study will be semi-structured in nature: more focused than the original pilot question, but still broad enough to allow participants to express any factors they believe to be relevant to the concept of rehabilitation-specific motivation.

APPENDIX E

SAMPLE INTERVIEW TRANSCRIPT

Interviewer: “As a certified athletic trainer, you have a unique understanding of the sport injury rehabilitation process. The goal of this interview is to obtain information from your knowledge and experiences to provide a better understanding of sport injury rehabilitation. The long-term goal is to improve the rehabilitation process for all involved.”

Travis: “Cool.”

Int: “Um, so...before we get into the, uh, the nitty gritty, I need some basic stuff. I’m gonna go with you’re male?”

Trav: “Yep.”

Int: “Age?”

Trav: “27.”

Int: “Ok. Uh, location of all your studies and everything?”

Trav: “Uh, did a bachelor’s of science in athletic training from (small Midwestern school). Master’s of science in kinesiology from MMU. Uh, been a certified athletic trainer since 2010, licensed and practiced in (two different states). Certified strength and conditioning specialist since 2013.”

Int: “OK, and what were the teams of experience?”

Trav: "Um, in grad school I worked with MMU volleyball and men's and women's indoor and outdoor track and field. At (Division II Midwestern school), my first real job where I was for three years, I worked with football and men's and women's cross country/indoor and outdoor track. I was also a physician extender, where I assisted in musculoskeletal and specialty concussion clinics with sports medicine physicians."

Int: "Ok."

Trav: "And then at MMU I worked with men's basketball and men's and women's cross country."

Int: "Ok...Alright. Ok and that is your current position?"

Trav: "Yes."

Int: "Ok, beautiful. So, can you provide some details about the injury and subsequent rehabilitation process for 'Jacob'. The current rehabilitation process."

Trav: "Yeah. So Jacob fell on his knee, um, during basketball practice. Got fouled while he was going to the basket. Um, fell onto his knee and felt funny. Um, he sustained a partial PCL tear and a small meniscus tear to his left knee. Um, following acute evaluation and then subsequent evaluation and imaging as ordered by one of our team physicians we were able to specifically diagnose that. And then we started the rehab process, I mean, pretty much day one. Um, initially, you know, we're looking to regain range of motion, decrease swelling. He had some of tho...both of those issues initially. Um, and then as we're able to do those things then we're able to build strength."

Uh, primarily the focus in early stages of PCL rehab- PCL was the primary injury we were focusing on. His meniscus tear was small and not something that our team physician felt was, um, something that need to be operated on. Um, typically that's something that they'll go in and either shave down or repair, but the location and the size of the injury was not something that our doc was specifically concerned about. Um, felt as if we, you know, rehab the PCL as we should that...then the meniscus tear would kinda heal and take care of itself in the same, uh, time period."

Int: "Ok."

Trav: "So, initially we're focusing on quad strengthening. When you have a full PCL tear you're gonna stay away from doing any type of hamstring exercise, actively, for about the first six weeks. We didn't have to follow that guideline specifically for Jacob because he didn't have a full tear, um, but we still needed to be careful with what he was doing with active hamstring activity early on in the rehab process. I mean that's something he still has issues with now, six weeks later. Um, we're still working on that just because, um, from a biomechanical standpoint, the goal of the PCL is to protect the tibia from translating posteriorly on the femur. And so, the hamstrings, where they attach on the tibia typically pull posterior. Um, so, when you're actively firing the hamstrings that will stress the PCL. So that's...that's the main idea of why you're trying to, uh, avoid that, because we want that PCL to scar down and heal."

Int: "Ok. What was the, uh, the overall prognosis before return to full participation?"

Trav: “Um, initially, the doc that though that it would be about four-to-six weeks. Um, Jacob’s a bit of a unique case because he does have diabetes and that does tend to slow the healing process down. Um, so, he was a little unsure of whether or not Jacob would be able to return to play by six weeks. Um, but he has been able to get back into pretty much full activity. Like I said, Monday...this past Monday, so four days ago, was six weeks on the dot and Jacob’s back into full participation. We’re still limiting his volume because he’s still, um, from a cardiovascular conditioning standpoint not quite where he needs to be getting his legs underneath him, that type of stuff. Um, he’s still having some discomfort, specifically in knee flexion when he fires his hamstring, um, but overall he has been participating as able for about the last 7-10 days. So he hit that, like, five, five and a half weeks range at...at full go. But, um, I anticipate that he’s still gonna have some healing going on and, um, you know, continue to feel improvement over the next probably two to three weeks, until that eight-to-ten week range.”

Int: “Ok, um, please describe as many details as you can recall relative to your thoughts and behaviors throughout the rehab program with your athlete.”

Trav: “Um, with Jacob specifically? Um, I, you know, initially how I try to handle most of my rehabs and I think I prob...hopefully handled Jacob this way is where I...as early on in the process I’m trying to be, um, a little bit more explanatory of why we’re doing some things and explaining why it’s important for him to do certain exercises a certain way using good form and that type of stuff. And then as we would progress, I would tend to be a little bit more hands off and allowing him to kinda do some of that stuff on his

own as he shows that he's proficient with it. Um, Jacob specifically is very responsible and does a really great job of following directions, so I don't know that, you know, maybe there's a chance that I was probably a little more hands off with him just because he does tend to follow directions really well and he's really smart and he does a nice job of...of doing what you ask him to do kinda on the first try without continuing to give him further cuing."

Int: "Ok."

Trav: "Uh, but, you know, hopefully, especially early on I'd like to think that I was being a little bit more hands on with him and then allowing him to kinda progress and...and become more independent with what he's doing as we went on."

Int: "There's a lot of good stuff there. Um, can you give me an example of, maybe that early explanatory behavior?"

Trav: "Sure. So I think, um, kinda like we talked about with avoiding active hamstring activity? Um, you know, that was one of the things that I felt like it was important to explain to Jacob early on because even, you know, when he's doing everyday activities, firing his hamstrings is obviously necessary for walking around, but it's something that we wanna still try to avoid as much as we can. So, um, explaining that and why that's important, like I said, trying to give him a layman's description of the posterior translation of the tibia on the femur and why that stresses the PCL and why we don't wanna do that so we can really let that heal appropriately. Um, so that's probably the biggest thing is, you know, I think...and probably and hopefully how I handle any rehab

is those things that we wanna, obviously we wanna do a good job of explaining why we're doing things here to make them better, but we also wanna make sure we're really explaining why we don't wanna do the things that could potentially delay the healing process."

Int: "Uh-huh."

Trav: "We wanna kinda stay away from...be more explanatory about the things that we wanna avoid."

Int: "And why do you feel that's important?"

Trav: "Um, because, uh, I mean we can control...I can control what they do in the athletic training room but I've only got patients in here for, you know, 45 minutes to 90 minutes for a rehab session and if they're doing things that're averse to the rehab and healing process then...then that makes everybody's job a little harder. That makes my job harder. It makes them more frustrated because their process is gonna take longer and everybody wants to get them back on the field/court/whatever as fast as possible. So, um, if you can get them a better understanding of why it's important to avoid those things that're gonna potentially slow that process down then, you know, hopefully we can control that situation and control that return-to-play process a little better."

Int: "So it sounds like being as descriptive as possible as soon as possible is...is critical."

Trav: "Yeah, I think so."

Int: “Alright, um, you also mentioned after you...you’ve been explaining things, you know, in depth early on, you go, you said, ‘hands off’. Talk to me about what that looks like.”

Trav: “Um, for me it’s, you know, giving Jacob two or three exercises and having him go through that stuff on his own, and then coming back, checking in and saying, ‘Hey, how ya doin? How’d this feel? Alright, here’s two or three more exercises. Let’s go ahead and knock those out and come back and re-check.’ And hopefully that allows him to go through the process a little bit quicker so he doesn’t have to spend two hours of his day here, um, but also allows me to be able to multitask, which I need to be able to do more often than not.”

Int: “That’s something that I definitely picked up on in the sessions that I watched. Um, talk to me about the environment and the multitasking.”

Trav: “Yeah, so, I mean, being involved with multiple teams, um, both basketball and cross country which are overlapping right now, um, there’s just increased responsibility in terms of the number of athletes that I’m taking care of. And, um, when we would go later in the afternoons uh...er later in the day, earlier in the afternoons with Jacob, you know, rehabbing in that kinda one-to-two session- two block- um, you know, both cross country and basketball are getting ready for practice at three or three thirty, so, um, there’s a lot of pre-practice setup and prep that goes on, whether it’s working with athletes or getting the court set up- water, Gatorade, things ready to go. Um, things like that that have to be done all kind of in that little time frame. So, um, you know, earlier in

the day you're typically more likely to see me juggling rehabs with athletes and then later in the day, early in the afternoon- pre-practice time- I'm more likely to be, um, going back and forth between an athlete or two, and then responsibilities of getting practiced set up for the day."

Int: "So, timing of when he comes in sort of dictates how much attention you're able to pay?"

Trav: "Yeah, definitely. So, I mean, I'm always tryin' to get my athletes in earlier, because earlier in the day we tend to see less people. So that's gonna be, um, that's gonna be easier for me to give them more one-on-one attention. And, again, Jacob as he went along in his rehab and was progressing, I felt pretty comfortable with him doing some things on his own, in terms of me writing out his rehab, giving him a few things to work on, and then us reconvening in ten minutes. Um, I'm pretty comfortable with him doing that, whereas some other people I may not have given that much freedom, depending on who it is and where they're at in their rehabilitation process."

Int: "So he was...so you were able to kinda provide him some autonomy in that?"

Trav: "Yeah."

Int: "Ok. Um, the phrase that I actually hit on, and it seemed like you were doing this frequently for better or worse, is 'autonomy by necessity'."

Trav: "Yeah."

Int: "Does that really kind of characterize how things go in here at times?"

Trav: “Yeah I think that’s pretty accurate. I would agree with that. Like you said just because there’s only one of me and sometimes there’s six athletes in here that need attention. So...so I’ve gotta bounce around and, uh, you know, do my best to explain things as best...and that’s I guess another reason to explain things early on, why we’re doing some things, so that later on if, by necessity I’ve gotta bounce around, then hopefully that has stuck a little bit.”

Int: “Uh-huh. Makes sense. Um, did you find yourself engaging in any behaviors to sort of regulate his motivation, one way or the other?”

Trav: “Um, yeah, I mean, probably not as much during the rehab sessions. Um, you know, early and late in the rehab session, you know, is where kinda house the ‘hey how ya doin today? How’s your knee feeling? How’re you responding to this?’ that type of stuff. Um, so, you know if we were doing any type of discussion about how he was feeling and maybe why he was feeling that way and how that’s gonna change what we’re gonna do moving forward, um, usually those conversations are happening really early in the rehab session or very late in the rehab session. But probably most often those are happening pre and post-practice. We get out on the floor, get him moving around, because not always...not always are the things that I’m doing- I mean hopefully some of the strengthening things that we’re doing in here are translating...”

Int: “Absolutely, yeah.”

Trav: "...to what's going on on the court, you know what I mean? That's what I want to happen, but not always is the strength and the stuff that he shows me on the table directly correlated to what he's able to do on the court."

Int: "Doesn't translate all the time."

Trav: "Yeah, so, you know, the fact that he's able to push against me really hard, um, with his quad muscle, you know, he might still have some difficulty- he might not feel as explosive as he should be or, or what have you, you know? And he's...we got him into a brace pretty early, um, just a combined instability brace not a specific, like, there's not really a specific PCL type of brace necessarily, so we just got him into a combined instability brace, um, and that's somethin' that, you know, doesn't necessarily inhibit him from doing anything, but it's just different. And that's not, you know, we're not rehabbing with that on, so then we put that into the mix when he goes out onto the court. So a lot of times we're, you know, tweaking stuff with that. And...and that's where I think after practice we'll kinda reassess how the day went, 'OK, rehab went like this. Practice went like this. Where do we go tomorrow?' You know what I mean? So I think a lot of our discussion maybe didn't...that discussion didn't occur always during the rehab time but, but maybe a different time during the day."

Int: "Gotcha. Is there an instance you can think of or look back on where you said, 'yeah I had to...I had to kind of crack the whip here or I had to pull the reins back here.' Something that you remember?"

Trav: “Um, yeah. Early in the process when he was getting back into more functional activities, he was really jonesing to get out of the brace, so I was letting him do more pre-practice activity. Pre-practice they do some shooting and just basic drills to kinda get ‘em warmed up. So I was letting him go through some basic drills that weren’t, um, a large departure from what we were doing in here (AT room) during rehab without the brace on. Um, but then he...as he gained confidence he started to do more without the brace on and it got to the point where he was, you know, doing some finishing around the rim which is, like, dunking basically, repeatedly in pre-practice. Where, you know, I walked in there later than normal one day and saw him doing that and then talked to him about it and then all of a sudden it’s, ‘actually my knee doesn’t feel that good now that I think about it after doing these...finishing around the rim.’ So then we kinda, you know, I talked to him about it a little bit and just, that’s where we...that was one of the things that I felt like I had to say ‘ok, we need to be one- more intelligent about what we’re doing pre-practice, you know? In terms of your drills. What’s...is doing repetitive dunking going to help you prep for practice today? And the two- are we doing too much out of the brace too soon?’ Which I think yes, we were. And I was kinda...again, where I said I feel comfortable with Jacob typically making responsible decisions and I can give him a little bit of leeway. That was something where I had to be like, ‘Alright, we’re not gonna get you out of the brace this soon, we’re gonna...we’re gonna wear the brace all the time so that we don’t have a setback that I don’t wanna have you feeling really good one day and get overly ambitious with something that you’re doing in the gym and then us have to have a really big setback.’ So, um, that was one of the things that, I guess, that

sticks out in my mind that we kinda had to re-evaluate how we were progressing and...and kinda change path a little bit.”

Int: “How did he respond to that?”

Trav: “Uh, pretty good I guess. I mean, he wasn’t really excited about wearing the brace more or potentially...I don’t think he was that upset about me saying, ‘alright, you have to be in the brace more now.’ But then that led to the conversation of ‘ok when do I...so you’re making me wear the brace all the time now, at what point do I get to start weaning out of it?’ And then my response to that was, ‘well, we might be wearing this thing all season, you know what I mean? You might be in it for a year.’ Um, and so that was what probably he didn’t respond as well to, um, when we’re talking more long-term, I mean, it’s not extremely long-term, but...”

Int: “You had to sorta check his expectations a little bit?”

Trav: “Yeah.”

Int: “Yeah. Understandable.”

Trav: “And that was probably based on what I had indicated to him early on was that ok, you know, yeah, if things are going well, sure, we’ll get you out of the brace as soon as you’re ready. Um, but then realizing that maybe he wasn’t gonna be ready for that as soon as what he thought, I guess. So yeah, I guess it’s still just expectations.”

Int: “So...when he found himself able to do some of those sport-specific maneuvers the motivation sorta ramped past where it was beneficial at that point?”

Trav: “Yeah, definitely. I think so.”

Int: “Yeah. That’s...they get very excited to use those skills that’s across the board, something that seems to happen a lot. But it sounds like overall, um, you didn’t have to do a ton to keep his motivation at a proper level, is that...”

Trav: “Nah he...I think Jacob is a very, um, highly intrinsically motivated individual. And, uh, certainly that’s not always the case. Um, but he is no doubt one of the hardest workers if not the hardest worker on our basketball team so that, you know, in some respects makes what we’re doing much easier, right? But like you said, it’s when he starts getting some basic things back he wants to go go go where that may not be the most appropriate thing. But, you know, he’s done a really good job of cross-training and doing things that, you know, aren’t that fun but are gonna help him make that transition back to participating fully a lot easier. So, um, like I said, from a work ethic/intrinsic motivation standpoint, he’s one that I didn’t have to spend a lot of extra time with in that department.”

Int: “So, it sounds to me like it’s...you would prefer to have to pull the reins back than...”

Trav: “Absolutely, yeah.”

Int: “get after an athlete.”

Trav: “No doubt.”

Int: “That’s fair. As far as Jacob goes, what are some other things that you can recall him saying or doing throughout the sessions and when you were with him in pre-practice and everything?”

Trav: “Um, just in terms of like, saying or doing...”

Int: “Anything.”

Trav: “Anything?”

Int: “Anything during the rehab that comes to mind.”

Trav: “Um, you know, he’s a smart kid so I think he just asks a lot of questions and he will make sure he’s doing things the right way and will check with me before he does- more often than not I should say- will check with me before he starts to do something new that he’s never done before and, you know, he’ll, you know, like I said inquire about why we’re doing some things. He just, like I said, is generally a pretty smart kid. Wants to have a good understand of what’s going on and why he’s feeling the way he does. So I think if there’s one thing that kinda stands out it’s that he’ll do a good job of, you know, asking why we’re doing some things, um, and then will translate that into, ‘ok, well if I’m doing this in here then don’t you think I should be able to do this, this and this on the court?’ Or, you know, ‘Here’s what I did yesterday. Do you think it would be appropriate for me to try this and this today since that went well?’ Um, so, and which again, like I said, it’s I would prefer to have that type of conversation than having one

where somebody doesn't wanna do anything or doesn't wanna...where it's harder to motivate them to want to progress.”

Int: “So it sounds like you were actually able to give him a little bit of ownership of the process.”

Trav: “Yeah, I think so. Um, and I think that's...I think that that probably helps motivate him as well, is, you know, him being able to kinda be involved in some of that, you know? Maybe not necessarily like be involved in the decision-making process, but be able to feel like he's giving...the fact that he's giving more input helps both parties make the best decisions.”

Int: “It also seems like you feel his...his actions and behaviors sort of earned him that. Is that fair?”

Trav: “Yeah, I think so.”

Int: “Yeah. Is that...how common do you find that?”

Trav: “Not real common I don't think.”

Int: “Yeah?”

Trav: “I mean if I think about the handful of other rehabs I'm working on, you know, while...even if they're not as, you know, I don't think I've had anybody else that's missed the amount of time that Jacob's missed at this point, so, um, you know, it's hard to...it's not exactly comparing apples to apples, but, yeah I think for the most part, I

don't see anybody else on our team coming in and working the way he does on a day-to-day basis with the rehab stuff or, you know, wanting to get from things that are bothering them."

Int: "Um, you mentioned earlier that you were very explanatory early in the process and he was asking a lot of questions early in the process, but that sort of tapers as the rehab progresses."

Trav: "Uh-huh."

Int: "Can you think of any other ways that his behavior sort of changed throughout the process, maybe week one to week five, or something like that?"

Trav: "Um...hmmm...I can't really think of anything specific off the top of my head."

Int: "No, that's fine."

Trav: "Um...yeah. I can't really come up with anything for that one."

Int: "So he was very...so you feel like he was curious and engaged at a high level throughout. It wasn't a 'I'm gonna ask questions the first few days about the injury' and then just tap out?"

Trav: "Yeah, I mean, I dunno. He probably asks less questions as we go on just because like...or maybe not less questions but maybe just the type of questions that he asks changed I guess. Because then as he's healing and he's being involved in more things, you know, uh, what he's feeling is changing so it's not like, 'ok, explain to me this

process.’ It’s, ‘why do I feel this way when I do this.’ Or, ‘Hey this is what I’m feeling. Is there a reason for that or should I keep pushing through it?’ You know what I mean? Whereas earlier it might just be literally explaining like what’s going on in your knee and that type of thing and the process for how we’re gonna get you better. Um, and then as he feels better, you know, his questions are gonna be a little bit more geared toward what he’s feeling today or that type of stuff I guess, if that makes sense.”

Int: “Absolutely, yeah. Based on your past experiences and your interactions with Jacob, what concerns about the rehabilitation did you perceive the athlete having?”

Trav: “Um, the biggest thing was just having to keep the reins pulled in, um, and making sure that he wasn’t...’cause I knew that- and the coaching staff and everybody kinda told me even since I’m new this year- that, ‘hey, he’s one that you’re really gonna have to keep the reins pulled in on, because he’s gonna...’ I mean the day after his injury he was like, ‘Look, if you tell me I can go to practice today, I’m gonna go to practice today. My knee feels like crap, but if you tell me I’m not gonna make myself worse by going and playing basketball on it, I’m gonna go play basketball. So you just tell me the word, you give me a brace, you tell me what I gotta do to get back out on the court, and I’m out there.’ Um, so that, I guess that was the biggest concern still, is...while it is not a bad thing, um, you do have to keep that in the back of your mind that he’s gonna be pushing...”

Int: “Pushing the envelope.”

Trav: “Yeah.”

Int: “So in that instance it sounds like the relationship and the climate here with the other ATs helped.”

Trav: “Uh, yeah, and from the coaching staff, yeah. Between, you know, it’s a little unique. You don’t always have...typically when you have a new athletic trainer with a sport, that’s usually because that athletic trainer left. Obviously with this specific situation, their athletic trainer is still here, so, um, that is a little helpful in terms of figuring out how to handle some things and picking up some tendencies on guys and that type of stuff. So that’s a bit of a unique situation to have, but, all in all, positive, in my opinion.”

Int: “So really, just, like, as a mini-summary for that...that section, if you can call it that, um, that was something you knew like even before he got hurt- if he ever got hurt- was that pulling the reins in was gonna be an issue, but that he would listen and he would ask questions and overall he should be a pretty good athlete to deal with.”

Trav: “Yeah...yes. That’s pretty accurate.”

Int: “That’s good. Something that I noticed, uh, in the sessions was just the incredible amount of interactions with teammates, with other athletes, the coaches came in almost every time...”

Trav: “Yeah.”

Int: “um, how does that impact things?”

Trav: “Um...I don’t know. I think it’s good and bad. I think there’s a little...I think there’s two sides of the coin there, no doubt. Um, I think it’s good because, you know, you can get some support from teammates and coaching staff and other athletes that are in here, you know? Going through, maybe not the exact same thing but similar stuff, you know what I mean? I think there’s, um, that type of camaraderie that’s able to be built whether you wanna be- obviously these kids don’t want to be in here, you know- so it’s not like this is a...this is an awesome place to be all the time. Um, but I think that having some support in that regard is...is positive. Um, you know, on the negative side that can slow things down sometimes. It can be, it can be a distraction. Um, you know, but that’s...it’s more of a distraction for some people, you know what I mean? It just kinda depends. And honestly Jacob is, no doubt, a, in my opinion he is a social butterfly. He kinda knows everybody. And so, I think he’s one- you know, some people will come in and mind their own business, and he’s one that will literally interact with anyone who walks past. So, um, you know, I think that might’ve been a little elevated in his...”

Int: “His instance.”

Trav: “Yeah...and he’s an important player for us, so I think that’s the other thing. Like, if we- if I was rehabbing a walk-on you might not’ve seen the coaches popping their heads in as frequently. Um, so, you know, there’s that too.” (chuckles)

Int: “So...maybe a little bit of the BOMC effect?”

Trav: “Yeah, absolutely.”

Int: “Uh-huh. Ok.”

Trav: “No doubt. I mean he’s not, you know, he’s not our, like, go-to guy. But like I said, he’s a solid player for us. He’s a guy that’s gonna play. And, and uh, you know, he is, because of his work ethic and because of his, um, social presence, I guess, he is definitely a face of our program. So I think the interactions...it’s probly a little elevated in this.”

Int: “Sounds like he’s sort of, kinda natural at building relationships people.”

Trav: “Yeah, definitely. I think that’s...”

Int: “Did that make your relationship with him smoother, easier?”

Trav: “Yes, definitely. And I think he, you know, he had a pretty tight relationship with (former AT, current head AT for school) as well, so I think he had a good experience with their previous athletic trainer and that, again, that helps me, um, in breaking through some barriers initially and that type of stuff. Because essentially, I mean, he got hurt before our season officially started, so, I mean, that was very early in the process of me getting to know these guys. Yeah, I mean I’d maybe, what, maybe talked to him once or twice beforehand and shaken his hand, said, ‘Hey, what’s up? How ya doin?’ Um, so, you know, yeah that...that...the fact that he had a positive relationship with the athletic training staff, I think, uh, definitely helps.”

Int: “What kind of, uh, you used the word barriers. What sort of barriers are you referring to?”

Trav: “Um, I think the big one is just trust, you know? I...cause for Jacob to not really know me that well and for me to look at his knee and tell him, ‘Hey, I think you have a somewhat significant knee injury here that’s gonna keep you out for an extended period of time,’ the first time I really get to talk to him. I felt like he...I felt like initially he probably was just like, ‘Well that’s just...that’s just your opinion. Like, I don’t even...why does it matter, like, what you say? Like somebody else is gonna have to figure this out, and tell me what to do.’ So, um, not like he was combative, but obviously he was frustrated. And just, with me being a new person telling him, ‘Hey, here’s what I think is going on,’ I think there was a little- whether he would admit it or not- I felt like he exhibited a little bit of doubt. And...and I don’t know if it was doubting me as much as it maybe was, like him tryin’ to be optimistic about, ‘Okay, you don’t- that’s fine, that’s your opinion. But, you know, you don’t have x-ray vision and you don’t know exactly what’s going on inside my knee right now. So we’re gonna- I’m not gonna freak out, or I’m not gonna, you know, get upset or worry about it until we go through the steps and have, specifically, a picture of what’s going on inside there.’ You know what I mean? So, I...that’s probably more of what it was if I...I would think is probably how he would describe it. But, um, and I think that’s probably...again, I don’t think that he would make that up. But I think me kinda watching how he handled that...that first 24-48 hours of figuring out what was going on. Especially ‘cause I think coming off the court, even though you hurt your knee and he knew something wasn’t quite right, you’re still runnin’ on some adrenaline and you’re not feelin’ that bad.”

Int: “That’s true. Yeah.”

Trav: “So he’s still, he’s still walkin’ around saying, like, you know, ‘This guy’s tellin’ me I might have a ligament injury in my knee and I don’t feel that bad. So, you know, what the heck? What does he know?’ Um, and then, you know, the next day you come in and your knee’s kinda swollen and it’s really stiff and you’re like, ‘Oh, okay, maybe something’s going on here.’ You know what I mean? Um, so I think that was a bit of the progression that I saw him... kinda how he maybe processed some of that stuff initially, internally.”

Int: “Gotcha. Do you feel like that reaction was better than an average athlete? Do you feel like it was worse?”

Trav: “Eh, I would say that’s pretty average. Um, I would expect that, you know what I mean? Certainly, yeah you get...and probably about as good as...about as good as, uh, you know, I would expect it to be. It’s not like he was, you know, I’ve been like cussed out and that type of stuff, you know what I mean? Like, so it’s not like he was doing that type of thing. Um, so, he...he definitely was by no means combative, you know what I mean? ‘Cause you get that from time to time, so I think how he handled it was probably normal, uh, for what I’ve seen in the past. That’s a pretty standard response.”

Int: “So overall, how do you feel Jacob adhered to the rehabilitation program?”

Trav: “Uh, about as well as I could’ve asked him to. Uh, I, you know, he didn’t do...every time he’s had a chance to show up, even when rehab wasn’t mandatory, if I just said, ‘Hey I’m opening up for two hours if you have an issue.’ You know, more often than not I was telling him, ‘Hey, yeah, you should be here.’ But, you know, even if

there was a day where we went hard six days out of that week and I was comin' in on Sunday for a little bit and said, 'Hey you can just bike today, you can take the day off,' or whatever, then he was always here. So, if I was here, he was in here, taking care of his stuff. So, um, I didn't have any issues in terms of adhering to what I was prescribing for him. Um, you know, outside of, like I said just, you know, as he got back into some more functional things he probably got a little ambitious with some of the stuff we were doing outside of his brace. But, that was...you know, that can be as much on me not giving him very precise information of, 'Hey you can do this, this and this for your pre-practice warmup, but you can't do finish-over-top-of-your-coach drills, uh, dunking over and over again.' So, um, you know, it's just one of those things. And that's...and that's part of probably, again that's Jacob being overly ambitious probably and me being...learning the curve a little bit with how to handle some of these guys and what I'm prescribing for them from an activity standpoint."

Int: "So it sounds like just being here and being present is a big part of the battle."

Trav: "Yeah, yeah no doubt. And, um, because it's, you know, these kids got a lot of stuff going on, obviously, you know? You know the drill with...in terms of what they're doing: classes, academic meetings, meetings with coaches, meetings with their professor, tutoring if they need it, um, any other type of extracurricular clubs or activities that they do. Which is not a whole lot, but, you know, Jacob's involved in some other stuff, I think. And, um, Jacob's an international student, so he has...I feel like he does other things with that. He's involved with the juvenile diabetes research foundation in the area."

Like he does, he's got his hand in a lot of different things. And so, uh, you know, it's making a schedule and finding a way to stick to that and having the kids make this a priority, um, because not everybody who walks through here has rehab and even though, yeah, they say they wanna be on the floor, rehab's not always real high on their list of things to do for the day."

Int: "How do they do that? Or how do you get them to do that?"

Trav: "Yeah I mean I think it's communication, explaining to them why it's important that they're here. Um...and me having a master copy of their class schedules (both laugh). Doesn't hurt! I gotta keep it right here, so..."

Int: "That's just so they are...they know that they're accountable to more than just themselves."

Trav: "Yeah, so, I mean we try to...we have a schedule board out here that we try to run, and uh, and they have my schedule and they have my cell phone number and they obviously can get ahold of me at any time of the day. Oh yeah, 'cause I have to know...'cause sometimes, kids will just straight up lie and tell you that they have class because they don't think that I have a way to, like, double-check that. So, I mean, that...it's not necessary for everyone, but occasionally that...'cause, you know, if I've got a kid telling me- okay, we're open at seven (AM) and we're open until, for rehab hours, until like 2:30, or 2:00 or whatever for pre-practice- um, more than likely these kids don't have class from seven-to-two every day."

Int: “No, no probably not.”

Trav: “Right? You know what I mean? More than likely we’ll get into the season, like these guys’ll be taking, like, a minimum course load.”

Int: “Right, absolutely.”

Trav: “You know, so like for them to, sometimes they’ll tell me that and I’m like, ‘Alright, let’s uh...I doubt it. You seem like a very ambitious student and all, but, uh, I’m sure you don’t have 20 credit hours right now.’”

Int: “Probably not. And I, sadly, I’m in the same boat coaching at (Division III college) man. Kid’s like, ‘Oh I can only be at practice at 3:15, I’ve got class.’ I’m like, ‘Class ended at 1:15, dude. You couldn’t eat and be at practice in 45 minutes? Really? Come on.’ So yeah, I feel you there.”

Trav: “I believe it!”

Int: “Alright, so we talked about a lot of good stuff. We talked about the details of the injury and what was worked on early versus what was worked on late, a lot of the differences in both your behavior: explanatory and then kinda giving him some autonomy, and then him asking different questions and then maybe pushing the envelope too far with the sport-specific skills and trying to do those types of things. Um, we talked about communication to keep him in line, um, why he’s so social and how the teammates/coaches can help or hurt the process. Um, and that overall his adherence was pretty good despite occasional issues.”

Trav: “Yeah.”

Int: “Is there anything else that you believe has impacted his adherence during the whole sport injury rehab process that we haven’t touched on? It can be people, it can be places, it can be anything internally for you or him. Anything that we haven’t gotten to.”

Trav: “Um, I mean I guess the two big things that come into my mind- and we kinda touched on the one- is, like, I do think Jacob and I were able to build a pretty good relationship from the start around this. So I think that he does trust what we’re doing in the process. Um, so the fact that he’s able to put his faith into, you know, what I’m telling him to do even though he might not wanna do 45 straight leg raises today, you know what I mean?”

Int: “Right.”

Trav: “He’s got trust in this process that I’m kind of leading him on, and that’s what’s gonna help him get better. Uh, the other thing, intrinsically for Jacob, is just kinda his upbringing and his background. Um, he is very respectful and, like, seems to have a high regard for authority. So even though, you know, I don’t necessarily see myself as a very, like, authoritative figure, necessarily, um, but he knows that...he respects that I am his athletic trainer and I am in charge of his injury care. And so, because of that, he follows directions. Like, and he went...I don’t know much about his upbringing, I guess. But just from him being an international student having gone to like- he didn’t go to like a military academy or anything- but I know he went to, like, an academy prep school after high school. Um, he’s lived internationally for a long time. Um, and so I think, you

know, that plays into his mindset and his approach, uh, and then yeah his adherence to kinda what I'm giving him. Because I do...I do think he's extremely respectful and has a high regard for coaching staff, and you know, and I think he kinda lumps me into that, um, in terms of what is supposed to go on here."

Int: "So kind of not just building the rapport and the trust, but building it quickly was important."

Trav: "Yeah, absolutely. No doubt."

Int: "And- just a last thing- do you feel with the authority, that some of that comes with providing him some more competence about what he's going through? Because I feel as though trust is that you know what you're doing and you got that from being here with Jim (head AT- pseudonym) and that was all very beneficial for you."

Trav: "Yeah."

Int: "But, is there any...do you feel like the way you helped him understand more what was going on had an impact on things too?"

Trav: "I mean I would like to think so (both laugh). And I think, you know, part of like, uh, early on in the process of me being here, you know, me being able to say, like, 'Alright I'm gonna do this physical exam on your knee. You know, yeah, me not having x-ray vision I can tell you what I think was wrong.' The doctor going ahead and looking at your knee and telling you he thinks the same thing. Us getting an MRI and then confirming that what we had said was correct..."

Int: "Right, right."

Trav: "Like, you know, those type of things- while I don't want people to be hurt- those do me a lot of good in the credibility department, you know what I mean?"

Int: "Absolutely."

Trav: "For the athletes and the coaches and everybody else. So if I'm able to look at somebody, give them a diagnosis and then us have that backed up by diagnostic imaging then, uh, you know, like I said, I don't want people to be...I'd rather not see anybody every day if I don't have to."

Int: "Absolutely."

Trav: "But if that stuff's gonna happen, that...that helps everybody trust in me a little bit more I think, if I'm able to give them some information and have that then confirmed."

Int: "Gave you something to build on real early."

Trav: "Yeah, absolutely."

Int: "Yeah, makes sense to me. Um, can you think of anything else that might have impacted his...his process? His adherence process?"

Trav: "I don't think so. I think we covered everything I've got."

Int: "Alright." TOTAL TIME: 43:58