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**“HOW LONG WILL I BE OUT?”
OVERCOMING AN ATHLETIC INJURY THROUGH DESIRED SOCIAL
SUPPORT: A CLOSER LOOK AT PROBLEMATIC INTEGRATIONS**

Thesis

Submitted to

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UNIVERSITY OF DAYTON

In Partial Fulfillment of the Requirements for

The Degree

Master of Arts in Communication

by

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ABSTRACT

"HOW LONG WILL I BE OUT?" OVERCOMING AN ATHLETIC INJURY THROUGH DESIRED SOCIAL SUPPORT: A CLOSER LOOK AT PROBLEMATIC INTEGRATIONS

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The purpose of this study was to investigate if athletes may benefit from the social support offered when applying the guidelines implicit in Problematic Integration (PI) Theory. The impetus for this study comes from the large number of athletes who are injured each year; a majority of these athletes take a longer time to recover than predicted. This study was completed in two parts. First, a pilot study conducted in-depth interviews with recently or currently injured athletes. Questions focused on the four orientations implicit in PI theory and which of these orientations regularly occurred, and the type(s) of support athletes felt would help them overcome these orientations. The qualitative analysis indicated that all athletes experienced at least one form of PI and desired a specific type of support to reduce stress and aid recovery.

In response to the initial data findings, a quantitative study was administered to further study the concept of administering social support to minimize problematic orientations. Surveys were developed using the data from the pilot study and the research done on PI theory and social support. An online

survey was completed by 211 collegiate athletes followed by a series of regression tests to examine the hypotheses of the study. The results of this study indicated support for both hypotheses, showing that identifying and then using social support to minimize the experience of problematic integrations during an injury can aid in reducing stress and facilitating a quicker recovery. The results showed the complexity of an athletic injury and the importance of social support networks in highly equivocal situations. Implications from this study are discussed in order to help establish stronger communication networks between athletes and their coaches, trainers, doctors, and other support network members.

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CHAPTER 1

INTRODUCTION AND REVIEW OF LITERATURE

Athletes who participate in highly competitive sports are likely to suffer injuries at some point during their careers. The human body can only sustain a certain amount of activity until it starts to break down. Coaches, athletic trainers, and doctors usually give athletes a list of guidelines to aid in minimizing injuries. Suggestions consist of creating a routine seven to eight hour sleep pattern, following the USDA Food Pyramid guidelines for a healthy diet; performing extra stretching exercises before and after workouts, regularly visiting the training room, and periodically undergoing active rest from an individual's specialized sport. These are all preventative measures, but recovery measures are yet to be studied. One question that had not been addressed, nor specifically studied, was whether or not the reduction of stress by the use of the social support networks can aid in the recovery of injured athletes.

The purpose of this study was to explore if athletes may benefit from the social support offered when the guidelines implicit in Problematic Integration (PI) Theory are followed. Additionally, the research focused on the degree to which

injured athletes perceived the support they received as beneficial in speeding up recovery from an injury. Sports injuries are important to study because injuries are a common trend in the United States. There are over three million injuries that occur annually among adolescents, when injury is defined as time lost from the sport (Hergenroeder, 2007). In addition, a majority of these injuries require visits to a physician's office or require hospitalization (Hergenroeder, 2007). Injuries are also important to address because data indicates that the number of sports injuries in all age groups is expected to keep rising in the future (American Sports Data, 2005). Research that may assist in minimizing injuries or speeding up the recovery process will be beneficial to many people, both athletes and non-athletes alike.

The Relationship between Stress and Athletic Injury

Injury is often referred to as the most stressful event with which an athlete is faced. Any significant amount of stress has negative affects on an athlete's body (Cooper, 2005). In an article by Bob Cooper (2005) Dr. Jeffrey Martin is quoted saying, "Stress can increase fatigue and add muscle tension. You won't breathe as deeply when you're stressed, which increases the effort of running" (p. 2). He also added that athletes under stress get sick and injured more frequently than less-stressed athletes and higher stress makes it harder to recover from injury. Athletes can eat nutritious foods and get an adequate amount of sleep, but if stress levels are high and support is low, then the chances of an injury can be probable and harder to recover from.

Stress is experienced when an individual perceives that the demands they experience outweigh their abilities to cope (Albinson & Petrie, 2003). When an athlete is injured, his or her stress levels have been shown to dramatically rise, which can prolong healing time (Smith, Smoll, & Barnett, 1995). Athletic injuries have been identified as a "traumatic stress" (Sefick, 1997). A traumatic stress is an unexpected, uncontrollable, overwhelming feeling that threatens an individual's sense of safety and security, causing a person to feel vulnerable in his or her environment (Sefick, 1997).

Traumatic stress immediately begins once an athlete experiences an injury; for fear that his or her season is permanently ending. Helping to alleviate this type of stress is where the importance of social support becomes apparent in the recovery process. Previous studies have focused on how stressful an injury can be to a serious athlete and has noted that increased stress levels can prolong the length of an injury. Several studies have shown that stress, fear, and anxiety among athletes can all lead to increased muscle tension, over arousal, and attentional disruption that can be an additional cause to more setbacks or re-injury (Gutkind, 2004). However, none of these studies show specific problems encountered by athletes during periods of injury and how support networks can attempt to lower stress levels of injured athletes.

Principles of Social Support and Its Influences on Overcoming Athletic Injury

The fact that these issues have not been addressed is important because it has been argued that social support can play a crucial role during an athlete's

injury (Maddison & Prapavessis, 2005). Social support is the process of mutual nurturing and caring among two or more individuals involving an exchange of resources between the individuals (Shumaker & Brownell, 1984). Shumaker & Brownell (1984) go on to state, "The communication between the individuals is also perceived by the recipient or provider to be intended to enhance the well-being of the recipient" (p. 13). Social support can occur within a network of people in close relationships or between people with weak ties to one another. Research shows that social support is crucial to handling life stress, crisis, mental and physical illness, unemployment, job stress, and several other stressors (Hardy, Richman, Rosenfield, 1991). Particularly, social support is a growing area of interest in the literature of sport and exercise, specifically where sport injury is concerned (Bianco & Eklund, 2001).

The argument for social support being a necessity for all athletes is based on the knowledge that social support has been positively linked to coping with competitive stress, slump in performance, burn-out, vulnerability to injury, recovery from injury, and performance (Rees & Hardy, 2000). Specifically, Ross & Berger (1996) have shown that injured athletes who perceive that they received adequate social support returned to competition sooner than those who did not share this perception.

Other studies have also shown that social support for injured athletes can reduce the negative effects of stress caused by athletic injury (Bunyan, 1999). Besides reducing stress, a study done by Shumaker & Brownell (1984), indicated that supported individuals are more mentally and physically healthy than

individuals who are not supported. This outcome is likely caused by the health-sustaining and stress-reducing effects that social support has been found to facilitate (Shumaker & Brownell, 1984). Petrie (1992) extended findings by Shumaker & Brownell (1984) and found that low social support increased one's vulnerability to injury. He also found that high levels of social support provided additional protection against injury.

There are three dimensions of social support that are commonly referred to: emotional, informational, and tangible support (Hardy & Crace, 1996). Each of these dimensions is relevant when attempting to understand the ambiguity an injured athlete is facing. The main function of these three types of support is to lessen the degree to which an athlete's injury is perceived as stressful. Rees and Hardy (2000) constructed several flow charts explaining the types of functions that each dimension should provide. One of their charts has been adapted below:

<i>Social Support Type</i>	<i>Definition</i>
Emotional Support	Behaviors
Listening Support	Indicate people listen to you without giving advice or being judgmental.
Emotional Comfort	Comfort you and indicate that people are on your side and care for you.
Emotional Challenge	Challenge you to evaluate your attitudes, values, and feelings.
Informational Support	Behaviors
Reality Confirmation	Indicate people are similar to you and see things the way you do, helping you keep things in focus.
Task Appreciation	Acknowledge your efforts and express appreciation for the work you do.

Task Challenge	Challenge your way of thinking about your work in order to stretch you, motivate you, and lead you to greater creativity and involvement in your work.
Tangible Support	Behaviors that
Material Assistance	Provide you with financial assistance or products.
Personal Assistance	Indicate a giving of time, skills, knowledge, and/or expertise to help you accomplish your tasks.

When these dimensions of support are used effectively by the proper networks, social support can be a beneficial coping resource in facilitating emotional and problem focused forms of handling the stressor (Bianco & Eklund, 2001). There has already been a large amount of research demonstrating that social support can contribute to the health and well-being of people by decreasing focus on stress and allowing for a coping effort to take place (Albrecht & Goldsmith, 2003). For example, a study by Andersen and Williams (1988) proposed a model of stress and athletic injury arguing that the presence of a positive and knowledgeable social support network either directly reduces an athlete's progression of injury or calms the negative effects of stress, which reduces the probability of injury (as cited in Hardy, Richman, & Rosenfield, 1991). Hardy et al., 1991, expanded Andersen and Williams (1988) study to discover and further support that life stress and several dimensions of social support were predictive of the frequency of injury among intercollegiate male athletes, in particular.

Other studies suggest that social support, especially emotional support, when directed toward an individual's needs, can produce a more positive mood

or strengthen mood improvements in an athlete, translating to lower pain ratings of an injury (Rock & Jones, 2002). This type of emotional support helps an athlete push harder and set higher goals during his or her recovery (Rock & Jones, 2002). Emotional support is especially important because many athletes, especially runners, suffer an identity crisis when their sport is no longer a part of daily practices (Ashwanden, 2007). Informational support is also crucial as it can elevate mood. Athletes appreciate knowledge that decreases uncertainty, specifically regarding future participation in athletic activity (Goldsmith, 2004).

Studies show that social support has a positive affect on the healing process during an injury and can be considered a critical factor in injury progression (Petitpas, 1999). Particularly, emotional and listening support provided by others are the two most fundamental aspects of social support and have the greatest chance of helping athletes cope with negative feelings during an injury (Rock & Jones, 2002). When an athlete is unable to contribute to the team's success, dignity and pride often take hard hits and perception of self-worth declines (Albinson & Petrie, 2003). For this reason, frequent interventions offer different dimensions of social support from several different networks, allowing the athlete to maintain a sense of importance and not dwell about one's future as a competitor (Albinson & Petrie, 2003).

The role of social support when rebounding from an injury is incredibly important. Just as rehabilitation is an ongoing process when overcoming an injury, social support should be an ongoing process as well. Providing the right kind of social support to an injured athlete will boost the athlete's self confidence

(Wasson, 2003). Increased self-confidence can be helpful because as, Chie-der, Chen, and Hung-yu (2003) discovered, athletes with higher sports confidence possess better concentration, game strategies, healthy emotions, control of tempos, and performance. If an athlete returns to a sport without the proper confidence levels due to a lack of social support networks, a complete mental block may occur (Chie-der et al., 2003). Even though the athlete is physically capable of competing, performance could be hindered. To help athletes maintain their sport confidence during an injury, social support is a critical factor throughout the rehabilitation process and during competition (Sefick, 1997). In addition, Aschwanden (2007) stated, "Social support can also provide a buffer against depression" (p. 44). This makes it important for athletes to spend their injured time with optimistic and encouraging people (Aschwanden, 2007).

As the above statement suggests, positive and knowledgeable social support network members are imperative for an injured athlete to establish. Past studies have found that coaches, teammates, friends, and parents are the most common social support providers for athletes (Petitpas, 1999). People who do not have healthy social relationships with anyone may experience major health risks (Goldsmith, 2004). Without a support network, athletes have the potential to develop bad habits that could hinder the rehabilitation process. More specifically, coaches and parents who stress winning at all costs and fail to provide adequate psychological support can increase the likelihood that athletes will be injured in the first place (Quinn, 2006). Then, once injury occurs, if an individual in an athlete's social support network has doubts about an athlete's likelihood of

recovering, he or she can sabotage the athlete's rehabilitation without realizing it (Petitpas & Danish, 1995).

To avoid this problem, social support networks must remain positive and realistic at the same time to help athletes reduce stress and speed healing (Petitpas & Danish, 1995). This positive interaction will increase the probability that the athlete will stick with a rehabilitation program (Global Coach Conference [GCC], 2001). In addition, the GCC (2001) reports that social support networks allow the athlete to develop flexibility to his or her current situation and look toward the future with a more positive attitude. Other data has also suggested that coaches, athletic trainers, and other support networks can aid in bolstering an athlete's self-confidence by providing counseling and other types of social support, decreasing pro-longed injury (Quinn, 2006).

Social support confidants are believed to help athletes through the denial of their injury and aid in limiting any violent emotions experienced by them (LeUnes & Burger, 1998). Unfortunately, friends and family are not very knowledgeable about athletic injuries and, instead of providing support, can give rise to additional doubts and anxieties (Petitpas, 1999). These new fears, as explained by Petitpas (1999), occur by a network acting overprotective or frightened, or through avoiding conversation regarding the injury altogether. Usually, however, networks of parents and friends have high levels of sympathy for the athlete and can provide an adequate amount of emotional support (Petitpas & Danish, 1995).

The Role of Athletes' Social Support Network Members

Coaches, teammates, and athletic trainers prove to be the most important people in offering informational support during an injury (Robbins & Rosenfield, 2001). Since all athletes deal with the pain of injury differently, it is important to focus on the willingness of athletes to talk with their coaches and teammates, otherwise known as "interactive sportsnets" (Nixon, 1994). By further investigating how different athletes react to their injuries and the types of support for which they wish, supporters can assist their athletes on a more beneficial level (Nixon, 1994).

Social support from coaches tends to be especially important for athletes. Wang and Chen (1999) concluded that the majority of athletes believe that a relationship with their coach is essential to their sports experience at college. Positive coach-athlete interaction has the possibility of dramatically improving not only the quality of the experience athletes obtain from their athletic participation, but also the quality of many life experiences in general (Turman, 2003). It is imperative that coaches create open environments for all of their athletes. Nixon (1994) found that athletes only confided in their coaches about an injury when they thought their coach would be sympathetic and understanding. If not, then the athlete opted to talk to a different resource (Nixon, 1994). Specifically, Nixon's (1994) study found that two thirds of athletes admitted to avoiding coaches or trying to hide pain or injury when they were hurt, and almost half tried to avoid injury from teammates and trainers due to the pressure to play and risk of not being received well by others.

The hardest part of supporting an injured player is that there is no specific formula in administering social support. Each athlete gains something different from the same gesture of support (Bunyan, 1999). This is why an emphasis on individual perception is important because it prevents coaches from treating each member of the team in the same manner (Bunyan, 1999). Once an athlete is hurt, coaches have a tendency to neglect him or her—especially in terms of emotional and listening support (Robbins & Rosenfield, 2001). This disregard can be detrimental as research has found that athletes who receive higher levels of emotional support from their coaches have been observed to be more motivated in comparison to those who receive lower levels of support (Rees & Hardy, 2000).

At the onset of athletic injury, a common fear is that their coach will push them aside and focus on the rest of the team (Bianco & Eklund, 2001). If an athlete experiences an extremely high loss of attention from the coach, the negative consequences of injury can become enhanced (Robbins & Rosenfield, 2001). Such consequences include lack of motivation to cross train or attend therapy and loss of desire to return to their sport. In addition, when injured athletes recover from their injury and rejoin the team, they can have trouble assimilating into the group again and team cohesiveness is disrupted (Bunyan, 1999).

Stress, as a result of the injury, often causes athletes to worry, which tends to cause isolation induced by the athlete (Wang, Callahan, & Goldfine, 2001). Once an athlete is sidelined, he or she has more spare time, which is

often spent worrying about his or her athletic future (Petitpas & Danish, 1995). Positive social support assists in pulling athletes out of social isolation and influences the development of adequate coping responses (Albinson & Petrie, 2003). When an athlete's injury-related uncertainty is reduced, beliefs and self-esteem about his or her future career often increase. Similarly, if social support networks are weak, the athlete's emotional reaction and uncertainty regarding his or her injury can consume his or her life (Petitpas & Danish, 1995).

Injured athletes may feel more motivated to return to their sport if they receive comfort, advice, and information that makes them feel cared about, because positive attributes enhance one's mood (LeUnes & Burger, 1998). As discussed earlier, a special relationship with a coach can make an athlete feel important during his or her recovery efforts. In particular, a coach's reinforcement of rehabilitation goals increases athletic confidence and the athlete's commitment to the whole rehabilitation process (GCC, 2001). Rehab is a difficult process, especially if the athlete is alone in an injury with no teammate in the same position (Turman, 2003). For this reason, a coach's encouragement can sustain the athlete's uncertainty about still being a part of the team while injured and upon his or her return to competition (Turman, 2003).

However, it is not only important that coaches offer social support, but that they adapt to the specific type of support that their athletes will perceive as being helpful and constructive, as the outcome of rehab is based on the level of satisfaction of support that is received (Hardy & Crace, 1996). Each injured athlete has different expectations regarding social support networks. One of the

most effective ways to understand athletes' behaviors is to know their individual perceptions, since human behavior is determined by individual beliefs and analyses (Wang et al., 2004). Therefore, the perceived quality of social support is more important than the quantity of support offered. For social support to be truly valuable for the athlete there must be a match between the athlete's needs and the types of messages coaches provide for him or her (Robbins & Rosenfield, 2001).

It is the responsibility of the coach to understand the perceptions of their athletes (Nixon, 1994). The perceived support that a coach provides for an athlete affects the social relationship between the two networks and contributes to the overall functioning of the athlete while he or she is injured (Bianco & Eklund, 2001). Wang et al., (2004, p. 2) state that, "There appears to be a gap between coaches' actual behaviors and athletes' preferred behavior of coaches. A miscommunication occurrence such as this has a chance to affect recovery time for an athlete and their experience in the sport altogether." Wang et al., (2001) also discovered that coaches' behaviors have a tremendous impact on athletes' performance and psychological well-being.

If a coach does not understand the perceptions of his or her athletes or engage in positive reinforcement with them, additional stress and uncertainty can be experienced by the athletes and even increase the likelihood of injury (GCC, 2001). Over time, the wrong type of social support offered by coaches can have more negative effects on their athletes than receiving no support at all (Nixon, 1994). Establishing effective communication with the athlete has a chance of

decreasing negative effects on the athlete, making positive perceived communication between the two parties one of the most important aspects of athletic competition (Wasson, 2003).

Potential Implications of Administering Desired Social Support

Supportive communication by valued people with whom an athlete has a relationship can reduce ambiguity, complexity, and unpredictability in a situation (Robbins & Rosenfield, 2001). If communicated properly, supportive messages will likely lead to feelings of control by the athlete as well as the feeling of knowing someone is there for support (Hardy & Cracy, 1996). Understanding how to provide desired support is critical because it is suggested that administering social support that is identified as helpful by athletes will have a positive impact on recovery efforts (Robbins & Rosenfield, 2001). More importantly, studies have shown that the combination of the stress of daily life and lack of social support are more important than an athlete's personality in contributing to the risk of sports injuries (Gould, Petlichkoff, Prentice, & Tedeschi, 2000).

However, we do not yet know how to effectively administer the necessary social support to athletes, presenting the question of how sports networks know which type of support to provide to their supportees. Here is where the benefit of this study was apparent, as it analyzed the kinds of messages athletes perceived as being helpful. Networks, coaches especially, can apply this data to their hurt

athletes—helping create a stronger communication network and recovery program.

Even though social support has been the focal point in a large range of studies, there had not been a full study devoted to the application of discovering ways to implement the most beneficial support possible. A study was needed that identified how to apply perceived positive support because, if well-received, social support can provide valuable resources to assist in dealing with the stress of injury by (a) providing the athlete with additional network connections and ties to his or her team, (b) preventing resource loss, (c) providing for resources that are lost, and (d) activating new resources (Hardy & Crace, 1996).

There are also several other reasons why discovering the proper social support tactics will benefit competitive athletics. This study further contributed to health communication because, although there have been several studies associated with athletic injury, few sources exist that provide a theoretical framework for consultants involved with injury support (Gutkind, 2004).

Principles of Problematic Integration Theory

This study aimed to construct an analysis of social support in athletic rehab by applying Problematic Integration (PI) Theory as a framework. PI theory is concerned with the nature of human belief and not necessarily what we know, but how we evaluate it (Babrow, 2007). PI theory helps study uncertainty in highly valued situations—such as an athletic injury. Babrow (2001, p. 80) defines

PI theory as, "A general perspective on the nature of the dynamic relationship between communication and tensions among expectations and desires."

Babrow's PI theory is concerned with the role of communication when desires and expectations diverge (Babrow, 1995). The stages of PI theory progress at the same rate of an incident or object that is experienced by an individual (Babrow, 1995). This theory suggests that people form probabilistic and evaluative orientations to their experiences. These probabilistic orientations that people experience address questions such as, "What does this (object) seem to be?" (Babrow, 2007). Pertaining to this study, the injury can be viewed as the object that athletes are trying to assess. At the onset of an injury, athletes are aiming to seek knowledge of their injury, and doing so by confronting resource networks to try and discover exactly what is wrong (Albrecht & Goldsmith, 2003).

After forming probabilistic and evaluative orientations, the orientations become integrated in an individual's present experience (Babrow, 2005). The evaluative orientations address whether the object's outcome is good or bad (Babrow, 2007). The evaluations that people create influence the probability of obtaining what they desire (Babrow, 1995). Theorists have named this phenomenon "wishful thinking" or "optimistic bias" (Babrow, 1991). The evaluations formed motivate future behaviors, in athlete's cases; it may be attending doctor appointments and treating their injury as quickly as possible.

The next phase of PI theory states that integration of probabilistic and evaluative orientations are often problematic (Babrow, 2007). At this point,

integration begins to take on one of four different types. The first form of integration is divergence, which involves a discrepancy (probability) between what the individual believes is reality and what he or she wants and evaluates reality to be (Babrow, 1995). As soon as an athlete is injured, divergence may occur. This is especially likely if the athlete has been hurt before.

The second outcome of problematic situations is the ambiguity felt by a person (Babrow, 2001). In this case, PI is usually a function of the interactions between levels of desire and the ambiguity of actually achieving those desires (Babrow, 1995). Ambiguous situations for athletes could be what treatment option is the best, what the exact injury is and its severity, and the time length they will be sidelined. The more ambiguous the situation, the more stress incurred by a person, especially if there is no support network indicating what needs to happen to help the situation (Hardy & Cracy, 1996).

The third form of integration is ambivalence, defined as a contradictory evaluation (Babrow, 2001). Ambivalence occurs when an object, action, person, or idea evokes mixed feelings within someone—after observing both the positive and negative outcomes of the situation (Babrow, 1995). Often, multiple scenarios provided by doctors, coaches, and trainers, force athletes to decipher the real consequences of their injury. Receiving mixed message from any of the above sources could cause an athlete to doubt his or her own feelings, especially when deciding to return to competition.

Impossibility is the last form of problematic integration that can occur. The most fundamental feature of impossibility is that it denotes certainty (Babrow,

2007). When impossibility occurs, people continue to value an object or situation even though they know it is impossible to achieve (Babrow, 2007). It is difficult for individuals to accept impossibility when the object at stake is of extreme value to them (Bradac, 2001). This orientation is likely to exist in situations where denial is present—such as the onset of pain during the season. When athletes sense that they are hurt but keep on pushing, it is because they do not want to accept the possibility of being hurt; once the athlete commits to the fact that he or she is injured, the chance of being able to compete and practice becomes obsolete (Nixon, 1994).

After one of these four orientations exist within an individual, it is possible that an integrative dilemma will form, entailing processes by which the given problematic orientation is transformed in some shape (Babrow, 1995). This transformation means that an initial problematic form or orientation may be altered into one of the other problematic forms possible (Babrow, 2007). In addition, the initial onset of problematic integration can shift to other dilemmas not present at first—also causing new orientations to take form (Babrow, 2007). For an athlete, the main focus to recover—can cause other concerns such as how well he or she will be upon return, disfigurement from surgery, or the relationship with teammates upon return (Sefick, 1997). It is probable that these shifts in focus can also cause a shift in problematic orientations.

Finally, Babrow (1995) claims that for any or all of the above integrations to occur and resolve, communication must function be the primary medium, source, and resource in all PI experiences. The act of communication in all facets

is where social support has its place in PI theory. Social support is central in the construction of PI theory (Bradac, 2001). Since support networks often ignore the psychological side of an injury and only focus on the physical well-being of an athlete, PI theory can help integrate the psychological adjustment of the athlete by directly confronting the uncertainty he or she is feeling (Petitpas & Danish, 1995).

When concentrating on the uncertainty aspect of social support and its accompanied affects, PI theory can help in reducing the equivocality felt by an athlete. Albrecht & Goldsmith (2003, p. 265) state that, "Social support refers to verbal and nonverbal communication between recipients and providers that helps manage uncertainty about the situation, self, the other, or the relationship and functions to enhance the perception of a person's control in their life experience." Often, when athletes become injured, they are confused about the future of their athletic careers. These uncertain futures can further be impeded if they receive negative social support (Petitpas & Danish, 1995). During an injury, questions focus on issues such as how soon the athlete will be able to return to his or her sport, how well performances will be once they do return, and if the expectations of coaches, teammates, and family can be fulfilled again.

Connecting Problematic Orientations and Athletic Injury

Whenever anything awful occurs to an individual, that individual experiences PI (Bradac, 2001). Supportive communication can be used as a resource when coping with any PI orientation (Ford, Babrow, & Stohl, 1996).

When faced with a problematic orientation, people are likely to turn to communication in efforts to resolve or manage the situation (Babrow, 1995). Social support as communication can be used to manage the uncertainty experienced by an athlete and reduce the onset of negative PI experiences. Emotional support allows an athlete to easier accept the traumatic event of an injury (Sefick, 1997).

Additionally, informational support can be used in answering an injured athlete's questions—in other words, it can help clear up any ambiguity or uncertainty that exists within the athlete. Babrow (2001) suggests that people usually seek information in order to chance other parts of the cognitive system so that the expectations and evaluations of the situation are easier to amalgamate. This concept can be used in counseling athletes because, once an individual is injured, it is important to readjust expectations not on the success of their competitive season, but on the success of the rehabilitation process (Bianco & Eklund, 2001).

Uncertainty is a key factor in PI and social support. The significance of uncertainty is underscored by research on coping with stress, illness, human helplessness, and perceived control (Ford et al., 1996). All of these factors play a crucial role during an athletic injury, indicating that the concepts in PI can be used to guide an effective communication path with the athlete and help counter some of the negative thoughts associated with sports injuries.

As previously stated, coaches and teammates are the main support networks for athletes. If a study can analyze how a coach, in particular, can

identify the stress and problematic orientations athletes experience during an injury, then they (the coach) can use this information to connect with the athlete and help them on an emotional and informational support level. Addressing the orientations may decrease the fear and anxiety of the injured athlete. By addressing the confusion felt by the athlete, it will be easier for the support network to put the injured athlete at ease and fight to recover quicker (Petitpas & Danish, 1995).

Babrow (2001) believes that social support is a process which entails communicating feelings and behaviors in order to help manage PI and individual evaluations. Further, Hines, Babrow, Badzek, and Moss (1997) argue that PI theory provides a useful framework for understanding failed communication patterns between a person and his or her desired supporter. The perception of an athlete's uncertainty in a situation is determined by the potential long term effects of his or her injury, such as the length of recovery time or whether any disfigurements will occur as a result (Sefick, 1997). The degree of potential risks an athlete encounters affects the type of supportive messages that should be offered.

Research incorporating PI and breast cancer indicated support of the PI analysis of social support messages (Ford et al., 1996). Results supported the assumptions that social support messages can and should be designed to fulfill a wide degree of uncertainty-related functions. These conclusions could also be associated with sports injuries, because social support messages are adapted to each individual, athlete or non-athlete alike, in what will most effectively decrease

his or her uncertainty. Since PI theory provides a broad perspective on uncertainty, it should be used in devising the type of social support offered. According to research conducted by Hines et al., (2001) injured athletes are more likely to experience multiple forms of PI, such as probabilistic and evaluative judgments, uncertainty, and ambiguity, as well as multiple concerns at one time. PI theory, which is more intricate than other uncertainty theories, matches the complex minds of athletes during an athletic injury.

Forming Hypotheses

Uncertainty puts an immense amount of discomfort and stress on the body (Hines et al., 2001). In order to cope, athletes often communicate with those who they believe will offer substantial support (LeUnes & Burger, 1998). The present study will use the four orientations (divergence, ambiguity, ambivalence, and impossibility) in PI theory to assess the amount of perceived social support interpreted by injured athletes. It is hypothesized that integrating the four principles of PI to help aid the social support offered to injured athletes will minimize stress experienced by an athlete and aid a quicker recovery. Lower amounts of stress may positively correlate with a sense of control, which in turn, allows stress levels to further decrease (Rock & Jones, 2002). Bradac (2001) argues that using supportive communication, which is guided by PI, helps facilitate coping by reducing uncertainty about the stressor, which, in this case, is the injury. Social support and PI fit well together when attempting to stabilize an

athlete's emotions during an injury, but, have not yet been integrated in attempt to combat the stress and anxiety that hurt athletes often possess.

Thus far, the research indicated much confusion regarding the concept of social support and its impact on a person's health. This uncertainty surfaced from the complexity of social support coupled with the lack of research on the specific topic (Bianco & Eklund, 2001). The present study applied social support research and PI's framework to examine the complexity of stress and rehab during recovery in the following two hypotheses:

H1: Increased use of the four problematic orientations to guide the social support efforts from coaches and other social support network members will be negatively associated with stress.

H2: Increased use of the four problematic orientations to guide the social support efforts from coaches and other social support network members will be positively associated with speed of recovery.

These hypotheses were investigated in order to examine what type(s) of social support can aid in minimizing the occurrence of problematic orientations and if reducing these orientations's existence would lower stress levels and ease athlete's rehab processes during an injury.

CHAPTER II

METHOD AND RESULTS: PILOT STUDY

Method

In order to discover whether or not a relationship existed between the orientations injured athletes experienced in relation to the social support desired, a pilot study was completed. The pilot study was a qualitative analysis, conducting in-depth interviews with injured athletes. Complete results from the interviews can be read in Appendix C. The pilot study was based around a qualitative method of interpretation because evidence supports the proposition that many of the meanings in interpreting and resolving PI are easier implemented through narrative use (Babrow, 2004).

Each athlete interviewed was currently going through rehab or was recently released to begin practicing his or her sport. To qualify for an interview, the athlete's injury must have occurred either during his or her most recent or current competitive season. The purpose of this time limit was so that the

athletes could recall their experiences at a more accurate level and be able to divulge more detailed information about their feelings during the injury.

In order to classify an athlete as "injured," they needed to be sidelined for at least three days, participating in no physical activity associated with their particular sport (Robbins & Rosenfield, 2001). Athletes were obtained on a volunteer basis through email and interviewed at their convenience at a location mutually chosen for accessibility purposes. The interview settings included the individual athlete's living residence, the student union, and library locations.

Sample

Twenty-two personal interviews were completed with injured athletes, ranging from 30 to 90 minutes in length. Of the 22 athletes interviewed, 11 were female and 11 were male. The sample of males played the following sports: four cross country runners, one tennis player, two basketball players, one soccer player, and three football players. The females sampled played the following sports: two basketball players, one softball player, one volleyball player, one rower, three track and field athletes, and three cross country runners. The participants were classified into three injury categories. Three of the athletes were in the minor injury category, being out of activity for three to seven days. Six athletes had moderate injuries, being sidelined for eight to 21 days. The last 13 athletes were out of competition for 22+ days, classifying their injuries as severe. Of the 22 athletes interviewed, 18 were Caucasian, three were African American, and one was Korean. Seven of the athletes were freshman, five were

sophomores, five were juniors, and five were seniors, with ages ranging from 18-22. Every athlete was from the University of Dayton.

Instrumentation

Every interview took place between January through April in 2006. An interview guide was constructed which addressed each point in PI theory. The guide was used to observe if athletes were experiencing any of the four orientations present in PI theory. Questions for this guide were developed based on Babrow's (2001) analysis of each of the four integrations; including the feelings an athlete may have while experiencing a form of PI, how an athlete overcame a specific orientation, or what would have helped them overcome a specific orientation. There was a set of questions for each problematic integration (divergence, uncertainty, ambivalence, and impossibility) concerning these issues.

Each interview began with a short survey that the athlete completed before questioning began (see Appendix A). The purpose of this survey was to obtain basic demographic information about the individual. Next, each athlete was interviewed using the interview guide as an outline (see Appendix B). The guide was not followed chronologically every time, as athletes brought up interesting issues that were further pursued. If a particular form of PI was identified during the interview, probing was used so the athlete would address what kind of support would have helped him or her feel more comfortable during the injury, in comparison to what kind of support was offered.

After conducting the interviews, a transcription process took place, where each interview was coded using the guidelines of each PI orientation and whether any problematic or evaluative issues emerged during the injury. Overall, the data was comprehended by reading and then re-reading, looking for a saturation point. Once the saturation point was reached, the responses of every athlete were grouped together. Subsequently, additional patterns regarding the type of support athletes craved in order to recover most quickly in their given situation was examined. Based on the patterns identified, each of the four orientations in PI were experienced by at least one athlete, and several positive and similar support methods were identified to help overcome the integrations experienced during athletic injury. Inter-coder reliability was also conducted with an agreement rate of 94 percent to ensure accurate interpretations.

Results of Pilot Study

The purpose of this pilot study was to discover if a true relationship did exist between the support offered to combat problematic orientations and an athlete's stress and recovery situations. The interviews helped discover a few key points. First, results found specific problematic orientations encountered by athletes and how much stress developed as a result. Then, results found specific support types to help minimize the orientation(s) that occurred and if stress and/or recovery efforts changed as an outcome.

Previous research had already indicated that athletes undergo an enormous amount of stress while they are hurt and that this stress can prolong

the recovery time of the athlete. Past research also suggests that implementing a series of social support functions can benefit athletes, enabling them to feel more certain and confident about their injuries (Hardy et al., 1991). Babrow's PI theory applies to situations where a lot is at stake and individuals highly value an object or event (Bradac, 2001). Past studies on PI included foci on breast cancer and elderly patients. However, PI theory had never been applied to athletic injury and providing the correct type of social support to help injured athletes.

This pilot study found all four forms of problematic orientations to exist among injured athletes. The two most prevalent orientations were divergence at the onset of injury and ambiguity about an array of issues such as whom or what to believe, how long recovery would be, the implications of the injury diagnosis, uncertainty about coach or teammates' thoughts, and how successful specific rehabilitation methods would be. Ambivalence and impossibility were also experienced by a majority of the athletes. First, ambivalence formed through athletes' analysis of their injury outcome and from the messages received from various networks. Next, problematic integration was also experienced in the form of impossibility when athletes began feeling discomfort, but neglected to address the issue of being hurt. Often, denial resulted as athletes practiced through their pain for the duration of their competitive season.

Discussion of Pilot Study

Based on athletes' narratives, patterns emerged for the style of support that was offered or desired in reference to the type of problematic orientation that

formed during the injury. Various types of support were desired by athletes during their injury and rehab period that were not provided. In efforts to minimize divergence, it would be beneficial to limit the number of messages that injured athletes receive. Many claimed that varying opinions added a significant amount of extra stress based on the idea that they (the athletes) did not know who to believe. The analysis showed that communication between the doctor, trainer, and coach is particularly important so these network members can all relay the same message(s) to their athlete(s). This consistency would aid in minimizing confusion and stress, allowing for consistent messages that are clear and easy to comprehend throughout the injury period.

When analyzing the uncertainty of injured athletes, various types of support may aid recovery and shorten injury length. Athletes who had elevated levels of ambiguity showed a pattern of low communication with their informational networks. A constant dialogue between the athlete and his or her support network member(s) is necessary in order for an athlete to feel like he or she knows everything that his or her doctor knows. This dialogue also showed to be imperative for a successful recovery. Communication that provides informational support, such as reality confirmation, occurs when a doctor or coach helps an athlete realize exactly what his or her injury is, how the alternative workouts will benefit them, and why the rehab process is so crucial for optimum recovery length.

Support from coaches, in particular, is a vital component, necessary for athletes to feel confident when returning to competition. Another type of

informational support, known as task appreciation, was increasingly being sought by athletes. Knowing that their hard efforts toward rehab and cross training were being noticed was encouraging and served as a motivating factor for several injured athletes. Also, since athletes appreciate hard work and rise to challenging situations, task challenge provided to serve as an inverted relationship in reducing stress and increasing motivation to recover.

Similarly, informational support was a key in limiting the amount of ambivalence experienced by athletes. When athletes were analyzing whether or not to continue with their rehab, it was crucial for them to feel appreciated by their coach and be challenged to return even stronger than they were prior to injury. Athletes claimed that providing basic information about their injury helped them evaluate their situation in a more constructive and clear-headed manner.

Emotional support offered through communication apart from listening was also craved among the athletes. They claimed that just knowing their coaches and teammates wanted them (the injured athletes) back in action and that they were missed was an important factor in their motivation to return more quickly.

Next, impossibility was often minimized when a network member stepped in and addressed the athlete. Often times, an athlete needed to be confronted about an injury. It is also important that a coach affirms the choice to temporarily stop competition to ensure future success.

As seen above, several support mechanisms were found to be practical in reducing stress felt by athletes during their rehabilitation. However, there was some support that was not successful in aiding athletic recovery. Emotional

support provided by listening efforts of networks was not always appreciated and sometimes detrimental to an athlete's recovery time. Five athletes communicated feelings of depression after divulging their thoughts about their injury or expressing feelings of confusion regarding their future athletic career and not receiving any encouragement. Athletes often viewed this action as a sign of abandonment and not being an important asset of the team anymore. As a result of the negative feelings perceived toward them, the stress of these athletes increased. At the time same time, motivation to return to these networks was not seen as a value to them any longer. For these reasons, it is important to constantly provide feedback to an athlete in order to show concern and to provide help in any way possible.

Obtaining narratives from athletes about their injury/recovery experiences and analyzing the discourses received allowed for the discovery that injured athletes experience a wide range of problematic orientations. It is highly probable that these orientations can be resolved by providing the desired support pertaining to each athlete's individual situation. It is also hoped that this support will have an impact on the stress and recovery processes of injured athletes.

Limitations of Pilot Study and Direction for Quantitative Analysis

The first major limitation in the pilot study was that the sample was only students from the University of Dayton (UD). It is difficult to make generalizations about the type of support athlete's desire when a majority of the athletes interviewed received support from the same athletic training and medical staff.

Since every athlete received advice from one support staff, the perceived support from this staff may have caused problematic integrations to occur. The sample size was also only 22 athletes and while, the interviews were in-depth, interviewing more athletes would produce supplementary data, increasing the validity and reliability of the study.

Next, athletes may not have accurately remembered everything about their injury. Although a time limit was utilized for those interviewed, it is possible that some could not recount their exact feelings about particular questions, causing them to merely agree, disagree, or make up an answer. Some people are better than others at understanding their feelings. Social desirability may have also been present if some athletes felt pressured to answer a question in a certain way because of how it was phrased.

The settings of interviews may have affected the validity of the study as well. Several of the interviews were conducted in different places. Some were in the privacy of apartments, but other meetings were in public settings where people constantly walked by, some even being friends of the athletes. This may have caused athletes to not share as much information because they did not want other people to hear what they were saying, or they may have been too distracted to recall everything in accurate detail. In the future, interviews should be conducted in settings that can ensure uninterrupted dialogue.

Another limitation was the restriction of the injury history of each athlete. Some athletes interviewed had previous injuries identical to the one they were currently recovering from. Since the athletes had already gone through the same

situation, the person may have felt less stress and underwent fewer complications during the repeated incident. The repetition created more difficulty in obtaining the athlete's true feelings, since most of the significant emotions and uncertainties were already experienced and expressed at an earlier time. Typically, these athletes were less stressed and it is likely that, had they not already gone through such an injury, could have supplied their feelings concerning any problematic orientations more in-depth.

In addition, whether or not an athlete was on athletic scholarship could have affected how coaches and trainers related to the player. An interesting note came from one athlete, who stated since he was one of the better players; he believed he got more attention than other injured athletes. Since some of the athletes were on scholarships and some were not, support could have been skewed based on player talent. Future research should conduct this same type of analysis addressing the issue of scholarship at the institution and whether or not athletes perceived that the amount of support they received was based on whether the coach placed a high value on their participation.

The biggest limitation of this study is the individual preference of each athlete. Some athletes may desire more support than other athletes, while coaches and trainers may provide more or less support from other networks. Two athletes may be receiving the same support from their coach but one could perceive the support as useless and the other sufficient based on individual need. This makes it difficult to state one type of support that should be provided

to every athlete. Future research should investigate individual variables that may impact desired support.

Several of these limitations were addressed in the quantitative portion of the subsequent study, providing more reliable results in reference to which orientations occurred the most during injury and what support can best be used to minimize these orientations.

CHAPTER III

METHOD AND RESULTS: STUDY TWO

Method

Results from the pilot study provided insightful information relevant to minimizing stress and aiding athletic recovery. The interviews from athletes helped create a more detailed, focused survey that was used in a quantitative analysis to offer more reliable information about how athletes feel before, during, and after their injury pertaining to stress, recovery, and social support.

In the qualitative analysis, interviews were coded for each of the four problematic orientations (divergence, ambiguity, ambivalence, and impossibility) on a scale of one through five. A score of one indicated little or no formation of a specific orientation while five signified full development of a specific orientation. When constructing the survey for study two, results from the interviews were consulted. Wherever an athlete received a score of four or five for an orientation, responses were analyzed looking for why the specific orientation formed, the

support received for the orientation, and the affect that both the orientation and support had on athletes stress and recovery.

The responses for the above categories were grouped under the specific orientation. Subsequently, patterns that consistently formed were constructed into survey questions. For example, almost every athlete who received a four or five for ambiguity noted that a main reason for their confusion was not being told what rehabilitation methods would help them recover the quickest. Therefore, when addressing the formation of ambiguity in the quantitative analysis, question five of this section in the survey asked, "I was clearly told what rehabilitation methods would help me recover the quickest". This process was used to develop every survey question when assessing each orientation, the stress experienced, the recovery process, and the social support desired and received.

Besides the initial results in the pilot study, information researched about PI theory and social support was used in the survey construction. There was a set of questions for each problematic integration (divergence, uncertainty, ambivalence, and impossibility). The questions in the survey aimed to identify what types and to what extent social support were provided and how athletes responded to this support.

Sample

The survey was administered from December 2007 to March 2008 using all of the schools in the Atlantic10 Conference excluding the University of Dayton,

who chose not to participate. Every athlete in every sport at each A10 school received a survey. The total number of participants in the study was 211.

The requirements in order to complete the survey were as follows: The athlete must have been currently going through rehab or was released from rehab within the last three months to begin practicing his or her sport and the athlete's injury must have occurred during his or her most recent or current competitive season. Also, in order to classify an athlete as "injured," they (the athletes) needed to be sidelined for at least three days, participating in no physical activity associated with their particular sport. The purpose of these guidelines were so athletes could more accurately recall their injury experience, detailed support messages received from network members, and the implications of the support received.

Instrumentation

First, individual approval from the Institutional Review Boards (IRB) at the A10 institutions was obtained. Then, University's athletic directors were contacted and asked permission to survey their respective athletes, and requested assistance in contacting individual coaches. Athletic directors of these schools were emailed a background of the study (Appendix E) and asked to send the survey link to their respective coaches and student-athletes. Any athlete who qualified for the study was asked to complete the survey on [surveymonkey.com](https://www.surveymonkey.com). Participation in the study was voluntary and there was an informed consent form

provided before taking the survey. The consent form reminded athletes that their identity was protected and they could exit the survey at any time.

Data Analysis

The survey identified if athletes were experiencing or experienced any of the four problematic orientations present in PI theory. After the target sample size was reached, the survey was closed and the data was entered into the Statistical Package for the Social Sciences (SPSS). Several multiple regressions were conducted in the form of enter and stepwise regressions using the four orientations as the independent variables and stress and recovery as the dependent variables.

CHAPTER IV

RESULTS

The survey described in the previous section (Appendix D) attempted to discover if injured athletes experienced any of the four problematic orientations described by Problematic Integration (PI) theory. Questions for this survey were developed based on athletes' responses in the pilot study, in addition to the information available in the past research about PI theory and social support. There was a set of questions designed to assess the extent to which each problematic orientation (divergence, uncertainty, ambivalence, and impossibility) is experienced during an athletic injury. Additional questions proceeded to identify the social support offered to combat these problematic orientations and how athletes responded to this support relating to stress levels and recovery efforts.

After entering the data into a SPSS data file, statistical tests in the form of multiple regressions were completed using enter and stepwise methods. These regressions addressed the hypotheses for this study. The results of the survey are given in the following sections of this chapter. The hypotheses for this study are provided below.

H1: Increased use of the four problematic orientations to guide the social support efforts from coaches and other social support network members will be negatively associated with stress.

H2: Increased use of the four problematic orientations to guide the social support efforts from coaches and other social support network members will be positively associated with speed of recovery.

Descriptives

Two hundred and eleven athletes responded to this survey. Every athlete was either currently injured and in the process of recovering, or had recovered from injury within the last three months from the time they received the survey. Out of the 211 athletes surveyed, 56 (26.7%) experienced a minor injury and were sidelined for three to seven days, 45 (21.4%) experienced a moderate injury and were sidelined for eight to 21 days, and 109 (50.9%) experienced a severe injury and were sidelined for at least 22 days. Four (1.9%) of the athletes chose not to disclose the severity of their injury.

Athletes were asked to report whether they were awarded any type of athletic scholarship by their current university. Of the 211 athletes, 53 (25.4%) were on no athletic scholarship, 105 (50.2%) were on partial athletic scholarship, and 51 (24.4%) were on full athletic scholarship. There were 5 (2.3%) of the athletes who did not disclose their scholarship status at their respective universities.

Of the 211 athletes surveyed, 15 (7.1%) indicated that they perceived themselves as one of the best athlete's on their team, 128 (60.7%) were starters on the varsity team, 54 (25.6%) were on the varsity team but not starters, seven (3.3%) were on the junior varsity team, and 7 (3.3%) did not contribute a lot in

team competitions. Three (1.4%) of athletes did not disclose their contribution level on their team.

The survey questions for each of the orientations were averaged into one independent variable per orientation in order to run the necessary regressions and identify relationships between the support for each orientation with the stress levels and recovery length associated with the injury. Decisions regarding the computations of the four variables (orientations) were made based upon the theoretical discussion offered by Babrow (2001) and results from the qualitative study. Prior to the computations of the averaged scores, a Cronbach's reliability test was conducted on each set of items to ensure that the variables were yielding consistent results. The means and standard deviations are reported below for each individual item and for the four orientations.

Divergence

For divergence (section 3 of the survey) three questions were averaged together. The questions were as follows: 1. I was told different time frames for how long I would be unable to practice/compete from individuals such as my coach, doctor, teammate, etc.; 2. Hearing conflicting messages about how long my injury would take to heal added stress to my rehabilitation program; 3. Hearing conflicting messages about how long my injury would take to heal added stress to my athletic identity. The Cronbach's alpha for divergence was .912, which shows that the subscale is highly reliable. Means and standard deviations for each question are presented in Table 1 and the scaled means in Table 2. The

means for the questions are all between 2.8 and 3.2 on a scale of one through five. A higher score means more divergence, so the results indicate that divergence was experienced a moderate amount.

Ambiguity

Next, six questions were averaged to create the ambiguity variable for this study. The questions were in the ambiguity section (4) of the survey, consisting of the following items: 1. Upon injury, I still thought I could participate in the upcoming athletic season; 2. Upon injury, my future as an athlete was unclear; 3. I felt my injury diagnosis was clearly explained; 4. I felt my injury diagnosis was accurate; 5. I was clearly told what rehabilitation methods would help me recover the quickest; 6. I felt that I needed more guidance in what rehabilitation to follow. The Cronbach's alpha for ambiguity was .948, indicating high reliability. Means and standard deviations for each question are presented in Table 3 and the scaled means in Table 4. The means for the questions are all between 2.2 and 3.5 on a scale of one through five for a scaled mean of 3.1. A higher score indicates more ambiguity, so the results indicate that ambiguity was experienced a significant amount.

Table 1: Individual Item Statistics, Divergence

	N	Mean	Std. Deviation	Variance
Conflicting times affect on rehab	211	2.87204	1.393087	1.941
Conflicting times affect on identity	211	2.92417	1.350109	1.823
Conflicting times affect on recovery	211	3.23223	1.256641	1.579
Valid N (listwise)	211			

Table 2: Scale Statistics, Divergence

	N	Mean	Std. Deviation	Variance
Divergence	211	2.8262	1.14288	1.306
Valid N (listwise)	211			

Table 3: Individual Item Statistics, Ambiguity

	N	Mean	Std. Deviation	Variance
Still thought could compete	211	3.56398	1.570390	2.466
Injury made athletic future unclear	211	2.62559	1.340614	1.797
Felt injury diagnosis clearly explained	211	3.28910	1.469313	2.159
Felt injury diagnosis accurate	211	3.55924	1.352263	1.829
Rehab instructions helped recovery	211	2.21801	1.245891	1.552
Felt needed more guidance for rehab	211	3.04739	1.399874	1.960
Valid N (listwise)	211			

Table 4: Scale Statistics, Ambiguity

	N	Mean	Std. Deviation	Variance
Ambiguity	211	3.0790	.80332	.645
Valid N (listwise)	211			

Ambivalence

Third, three questions from section 5 of the survey were averaged to yield the independent variable of ambivalence. The questions were as follows: 1. Individuals in my support network gave me varying messages related to my injury; 2. Receiving different messages from people made me feel uncertain about my injury status; 3. I picked one person's advice and adhered to it over everyone else's. The Cronbach's alpha for ambivalence was .950, again indicating high reliability. Means and standard deviations for each question are presented in Table 5 and the scaled means in Table 6. The means for the questions are all between 2.5 and 2.6 on a scale of one through five. Since a higher score indicates higher ambivalence, this orientation was experienced a moderate amount.

Impossibility

Last, four questions from section 6 of the survey, addressing "impossibility" were averaged to create the last independent variable. The questions were as follows: 1. I continued practicing and/or competing even though I knew I was hurt; 2. My coach pressured me to practice and/or compete even after my injury was diagnosed; 3. I had trouble accepting I was really injured; 4. I was angry when I was unable to participate in my sport. The Cronbach's alpha for impossibility was .891, indicating another reliable subscale.

Means and standard deviations for each item are presented in Table 7 and the scaled means in Table 8.

Table 5: Individual Item Statistics, Ambivalence

	N	Mean	Std. Deviation	Variance
Same network gave varying message	211	2.65877	1.347716	1.816
Messages affected injury certainty	211	2.62559	1.392876	1.940
Picked one persons advice to listen	211	2.59242	1.374856	1.890
Valid N (listwise)	211			

Table 6: Scale Statistics, Ambivalence

	N	Mean	Std. Deviation	Variance
Ambivalence	211	2.5628	1.02610	1.053
Valid N (listwise)	211			

Table 7: Individual Item Statistics, Impossibility

	N	Mean	Std. Deviation	Variance
Continued practicing when knew hurt	211	2.63033	1.730904	2.996
Coach pressure during injury	211	3.48815	1.668647	2.784
Had troubled accepting injury	211	2.51185	1.592722	2.537
Angry when could not compete	211	1.42180	.993933	.988
Valid N (listwise)	211			

Table 8: Scale Statistics, Impossibility

	N	Mean	Std. Deviation	Variance
Impossibility1	211	2.0261	1.06594	1.136
Valid N (listwise)	211			

The means for the questions addressing impossibility are all between 1.4 and 3.4 on a scale of one through five, with a scaled mean of 2.0. A higher score indicates more impossibility, so the results indicate that impossibility was not experienced to the degree that the other three problematic orientations were.

In order to determine whether the differences between the four orientations were statistically significant, paired t-tests were run between each of the orientations. The t-tests show that the differences for the comparisons of each orientation set were significant ($p < .005$). These results are provided in Table 9. The means for the variables indicate that ambiguity was experienced the most as a problematic integration during injury rehabilitation, followed by divergence, ambivalence, and then impossibility.

Dependent Variables

Both of the dependent variables, stress and recovery, were each averaged into their respective total indices, as well. A series of questions were asked throughout the survey to identify if social support messages offered addressed the orientations and helped alleviate stress and motivate recovery. Prior to the averaging of each variable, a reliability test was conducted to ensure that the variables were appropriate for summation/averaging. The means and standard deviations are also reported below for each individual question and the scaled indices.

Table 9: Paired Samples T-Test, Four Problematic Orientations (IVs)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Ambiguity - Ambivalence	.51619	.96271	.06628	.38554	.64684	7.789	210	.000
Pair 2	Ambiguity - Divergence	.25276	1.30530	.08986	.07562	.42991	2.813	210	.005
Pair 3	Ambiguity - Impossibility1	1.05292	1.04538	.07197	.91105	1.19479	14.631	210	.000
Pair 4	Ambivalence - Divergence	-.26343	1.26484	.08708	-.43508	-.09177	-3.025	210	.003
Pair 5	Ambivalence - Impossibility1	.53673	1.04859	.07219	.39442	.67904	7.435	210	.000
Pair 6	Divergence - Impossibility1	.80016	1.47033	.10122	.60062	.99970	7.905	210	.000

Stress

For stress, five questions were scaled from five different sections of the survey in order to assess how much the support offered in reference to the four orientations affected stress experienced. The questions are as follows: 1. Rate your stress level in response to hearing varying messages throughout your injury; 2. Receiving different messages from people increased the stress levels I experienced in regards to my injury; 3. The more I learned about my injury, the less stress I felt; 4. The more communication I have with my support networks, the less confused I felt about my injury; 5. The support I received from my coach(es) helped lower my stress levels during my injury. The Cronbach's alpha for stress was .912, which demonstrates high reliability. A higher score indicates that the support offered by support networks better helped stress management. With an average mean of 2.4, support offered had a moderate affect on stress. Means and standard deviations for each question are presented in Table 10 and the scaled means in Table 11.

Recovery

Nine of the survey questions were scaled to create a dependent variable for recovery in order to assess how much the support offered in reference to the four orientations affected speed of recovery. The questions are as follows: 1. The support I received from my coach(es) helped me recover quicker; 2. Hearing conflicting messages about how long I would be injured for hindered my ability to recover quicker;

Table 10: Individual Item Statistics, Stress

	N	Mean	Std. Deviation	Variance
Coach support lower stress	211	2.78199	1.242063	1.543
Conflicting times affect on stress	211	3.23697	1.179491	1.391
Stress because of different messages	211	1.95735	1.356845	1.841
More athlete learned less stress felt	211	2.21801	1.276102	1.628
Different messages affected stress	211	2.37441	1.275076	1.626
Valid N (listwise)	211			

Table 11: Scale Statistics, Stress

	N	Mean	Std. Deviation	Variance
Stress	211	2.4467	.74390	.553
Valid N (listwise)	211			

3. The recovery instructions I received helped me recover quicker; 4. I felt that I needed more guidance in what rehabilitation program to follow; 5. The more I learned about my injury, the more motivated I was to recover; 6. The more I learned about my injury, the easier it was for me to recover; 7. Hearing the same messages from different members in my support network would have increased my motivation to recover quickly; 8. Hearing the same messages from different members in my support network would have made it easier to recover; 9. Receiving more communication in general during my injury from members of my support network would increase my motivation to recover. The Cronbach's alpha for recovery was .941, indicating high reliability. Means and standard deviations for each question are presented in Table 12 and the scaled means in Table 13. A higher score indicates the recovery efforts as a result of the support offered. Since the average mean is 2.3, support had a moderate affect on recovery efforts.

In order to make sure that the difference between the two dependent variables was statistically significant, a paired t-test was run using stress and recovery. The results show a trend towards a significant difference between stress and recovery, with stress being slightly higher than recovery ($p < .06$). This is indicated in Table 14.

Table 12: Individual Item Statistics, Recovery

	N	Mean	Std. Deviation	Variance
Conflicting times affect on recovery	211	3.23223	1.256641	1.579
Rehab instructions helped recovery	211	2.21801	1.245891	1.552
Felt needed more guidance for rehab	211	3.04739	1.399874	1.960
More athlete learned more motivated	211	2.01422	1.119008	1.252
More athlete learned easier recovery	211	2.14692	1.134828	1.288
Same messages affect recovery mot.	211	1.67773	1.437732	2.067
Same messages made recovery easy	211	1.78673	1.406453	1.978
More comm. would increase desire	211	1.71090	.993706	.987
Valid N (listwise)	211			

Table 13: Scale Statistics, Recovery

	N	Mean	Std. Deviation	Variance
Recovery	211	2.3460	.74480	.555
Valid N (listwise)	211			

Table 14: Paired Samples T-Test, Dependent Variables

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	Recovery - Stress	-.10071	.78086	.05376	-.20668	.00526	-1.873	.062

Regressions: Hypothesis Tests

A multiple regression was conducted on each injury measure (problematic orientations vs. stress and problematic orientations vs. recovery). In a subsequent regression, the player contribution, scholarship status, and injury length also served as covariates. Regressions were conducted using both the enter method and stepwise method for each dependent variable in order to provide a more detailed examination of the impact of the predictors on each dependent variable.

Stress Regressions

The regressors used for the first regression were divergence, ambiguity, ambivalence, impossibility, and stress. The regression (using the enter method) yielded a moderate variance accounted for (R^2 adjusted=32.5%) but the overall relationship was significant ($p<0.00$). The beta values are all negative except for impossibility. The negative betas demonstrate that the more an individual integration is addressed among support networks, the lower stress levels will be during an injury. Since the value of $F=26.23$ and the overall model is significant, it is very unlikely that these results occurred by chance.

Individually, the problematic orientations had different influences on stress. Divergence was significant ($p<.001$, $Beta=-.431$), ambiguity was significant ($p<0.002$, $Beta=-.205$), ambivalence was significant ($p<.001$, $Beta=-.405$), and impossibility was not significant ($p<.885$, $Beta=.010$). This indicates that the more an individual support network addresses either divergence, ambivalence, or ambiguity, the less stress experienced by the injured athlete.

Support addressing impossibility appears to not have a significant impact on stress. Overall, the results for this regression can be interpreted as showing that the relationship between the amounts of support used to combat the problematic orientations has a negative relationship with stress levels. These results are shown in Table 15.

When a stepwise regression was computed, impossibility was not included in the variables entered, but the remaining three orientations were. The model summary in Table 16 indicates that ambivalence accounted for 13.0% of the variance ($R^2 \text{ adj} = .130$). The inclusion of ambiguity resulted in an additional 16.7% of the variance being explained. The final addition of divergence accounted for an additional 3.1% of the variance.

These three orientations accounted for 32.8% of the variance. Ambivalence was significant ($p < .001$, $\text{Beta} = -.409$), divergence was significant ($p < .001$, $\text{Beta} = -.432$), and ambiguity was significant ($p < .001$, $\text{Beat} = -.207$). In the stepwise regression, impossibility was not included in the model. Considering how these measures are scored, the negative betas present among ambivalence, divergence, and ambiguity indicate that the relationship between the amounts of support catering to specific integrations is negatively associated with stress levels.

Table 15: Stress Regression Results, Enter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581(a)	.337	.325	.61136

a Predictors: (Constant), Impossibility1, Divergence, Ambiguity, Ambivalence

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.218	4	9.804	26.232	.000(a)
	Residual	76.995	206	.374		
	Total	116.213	210			

a Predictors: (Constant), Impossibility1, Divergence, Ambiguity, Ambivalence

b Dependent Variable: Stress

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.890	.187		10.100	.000
	Ambiguity	-.190	.061	-.205	-3.112	.002
	Ambivalence	-.294	.053	-.405	-5.573	.000
	Divergence	-.281	.039	-.431	-7.184	.000
	Impossibility1	.007	.047	.010	.145	.885

a Dependent Variable: Stress

Table 16: Stress Regression Results, Stepwise

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.366(a)	.134	.130	.69387
2	.551(b)	.304	.297	.62360
3	.581(c)	.337	.328	.60991

a Predictors: (Constant), Ambivalence

b Predictors: (Constant), Ambivalence, Divergence

c Predictors: (Constant), Ambivalence, Divergence, Ambiguity

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.587	1	15.587	32.375	.000(a)
	Residual	100.625	209	.481		
	Total	116.213	210			
2	Regression	35.327	2	17.664	45.423	.000(b)
	Residual	80.886	208	.389		
	Total	116.213	210			
3	Regression	39.210	3	13.070	35.135	.000(c)
	Residual	77.003	207	.372		
	Total	116.213	210			

a Predictors: (Constant), Ambivalence

b Predictors: (Constant), Ambivalence, Divergence

c Predictors: (Constant), Ambivalence, Divergence, Ambiguity

d Dependent Variable: Stress

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.766	.129		13.715	.000
	Ambivalence	-.266	.047	-.366	-5.690	.000
2	(Constant)	2.306	.138		16.672	.000
	Ambivalence	-.368	.044	-.507	-8.297	.000
	Divergence	-.284	.040	-.436	-7.125	.000
3	(Constant)	1.891	.186		10.140	.000
	Ambivalence	-.297	.049	-.409	-6.102	.000
	Divergence	-.281	.039	-.432	-7.219	.000
	Ambiguity	-.192	.059	-.207	-3.231	.001

a Dependent Variable: Stress

With variables for scholarships awarded, injury length, and level of contribution held constant, the model (using enter) remained consistent ($R^2_{adj}=34.4\%$). Scholarship money and level of contribution did not significantly contribute to the model ($p<.734$ and $p<.165$) but injury length did ($p<.001$, $Beta=.219$). Divergence and ambivalence remained significant ($p<.001$, $Beta=-.373$, $p<.001$, $Beta=-.413$), and ambiguity remained significant ($p<.020$, $Beta=-.154$). Impossibility also remained non-significant after injury length was factored into the model ($p<.874$, $Beta=.011$).

These results are in Table 17 and indicate that length of injury is positively correlated with stress experienced meaning that the longer the injury, the more stress experienced while the other three orientations are negatively correlated. This indicates that the more support offered for ambivalence, divergence, and ambiguity, the less stress experienced. The sizes of the betas indicate that support for ambivalence, followed by divergence, and then ambiguity has a greater impact on decreasing stress during an injury.

Table 17: Stress Regression Results with covariates, Enter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.311(a)	.097	.084	.69523
2	.605(b)	.366	.344	.58833

a Predictors: (Constant), Time unable to play, Level of contribution, Money to play

b Predictors: (Constant), Time unable to play, Level of contribution, Money to play, Ambiguity, Divergence, Impossibility1, Ambivalence

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.589	3	3.530	7.302	.000(a)
	Residual	98.603	204	.483		
	Total	109.192	207			
2	Regression	39.965	7	5.709	16.495	.000(b)
	Residual	69.227	200	.346		
	Total	109.192	207			

a Predictors: (Constant), Time unable to play, Level of contribution, Money to play

b Predictors: (Constant), Time unable to play, Level of contribution, Money to play, Ambiguity, Divergence, Impossibility1, Ambivalence

c Dependent Variable: Stress

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.953	.223		8.761	.000
	Money to play	-.022	.075	-.021	-.290	.772
	Level of contribution	-.015	.066	-.017	-.231	.818
	Time unable to play	.262	.057	.307	4.596	.000
2	(Constant)	1.630	.276		5.908	.000
	Money to play	.022	.064	.021	.340	.734
	Level of contribution	-.079	.057	-.087	-1.393	.165
	Time unable to play	.187	.051	.219	3.684	.000
	Ambiguity	-.146	.062	-.154	-2.346	.020
	Ambivalence	-.295	.051	-.413	-5.767	.000
	Divergence	-.238	.040	-.373	-5.963	.000
	Impossibility1	.007	.046	.011	.159	.874

a Dependent Variable: Stress

When using a stepwise regression, length of injury, ambivalence, divergence, and ambiguity entered into the model, all significantly contributing to the dependent variable. Table 18 indicates that length of injury accounted for 9.2% of the variance ($R^2_{adj}=.092$, $p<.001$, $Beta=.220$). The inclusion of the ambivalence resulted in an additional 12.8% of the variance being explained ($R^2_{adj}=.220$, $p<.001$, $Beta=-.407$). The addition of divergence accounted for an additional 11.1% of variance ($R^2_{adj}=.331$, $p<.001$, $Beta=-.373$) and the final inclusion of ambiguity accounted for an additional 1.6% of variance ($R^2_{adj}=.347$, $p<.016$, $Beta=-.153$). These four variables accounted for 34.7% of the variance. The overall model was also significant ($p<.001$, $F=28.505$).

In this stepwise regression, ambiguity entered into the model but in doing so, the F value decreased from 35.204 to 28.505, indicating that ambiguity lowers the overall significance of the model. The high betas for ambivalence and divergence show that the occurrences of these problematic orientations have a larger effect on stress experienced than length of the injury.

In this regression, length of injury and stress have a positive relationship, meaning that the longer the injury the more stress experienced by the athlete. The betas for divergence, ambivalence, and ambiguity indicate a negative relationship, showing the more support directed toward these specific integrations, the lower the stress experienced. These results support the first hypothesis. The results for impossibility, however, did not support the first hypothesis, in that support directed toward impossibility did not have a significant affect on stress.

Table 18: Stress Regression Results with covariates, Stepwise

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.310(a)	.096	.092	.69224
2	.478(b)	.228	.220	.64125
3	.584(c)	.341	.331	.59386
4	.600(d)	.360	.347	.58688

a Predictors: (Constant), Time unable to play

b Predictors: (Constant), Time unable to play, Ambivalence

c Predictors: (Constant), Time unable to play, Ambivalence, Divergence

d Predictors: (Constant), Time unable to play, Ambivalence, Divergence, Ambiguity

ANOVA(e)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.479	1	10.479	21.868	.000(a)
	Residual	98.714	206	.479		
	Total	109.192	207			
2	Regression	24.897	2	12.448	30.273	.000(b)
	Residual	84.296	205	.411		
	Total	109.192	207			
3	Regression	37.247	3	12.416	35.204	.000(c)
	Residual	71.945	204	.353		
	Total	109.192	207			
4	Regression	39.272	4	9.818	28.505	.000(d)
	Residual	69.920	203	.344		
	Total	109.192	207			

a Predictors: (Constant), Time unable to play

b Predictors: (Constant), Time unable to play, Ambivalence

c Predictors: (Constant), Time unable to play, Ambivalence, Divergence

d Predictors: (Constant), Time unable to play, Ambivalence, Divergence, Ambiguity

e Dependent Variable: Stress

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.869	.135		13.796	.000
	Time unable to play	.264	.056	.310	4.676	.000
2	(Constant)	1.152	.174		6.602	.000
	Time unable to play	.285	.052	.335	5.446	.000
	Ambivalence	-.260	.044	-.364	-5.921	.000
3	(Constant)	1.822	.197		9.234	.000
	Time unable to play	.193	.051	.227	3.790	.000
	Ambivalence	-.340	.043	-.476	-7.935	.000
	Divergence	-.238	.040	-.373	-5.918	.000
4	(Constant)	1.513	.233		6.497	.000
	Time unable to play	.188	.050	.220	3.722	.000
	Ambivalence	-.290	.047	-.407	-6.162	.000
	Divergence	-.238	.040	-.373	-5.990	.000
	Ambiguity	-.145	.060	-.153	-2.425	.016

a Dependent Variable: Stress

Recovery Regressions

The regressors used for the second regression were divergence, ambiguity, ambivalence, impossibility, and recovery. The regression (using the enter method) was not a very good fit (R^2 adjusted=9.3%) but the overall relationship was significant ($p<0.00$, $F=6.287$). This regression signifies that the second hypothesis was supported, meaning that the more support addressing specific problematic orientations, the easier the recovery process from an injury. These results are in Table 19.

Table 19 indicates that ambiguity was significant ($p<.003$, $Beta=.231$) and ambivalence was significant ($p<0.007$, $Beta=.227$). Divergence was not significant ($p<.085$, $Beta=-.121$) and impossibility was not significant ($p<.110$ and $Beta=-.125$). The betas indicate that increased support addressing ambiguity and ambivalence are positively associated with speed of recovery.

Table 19: Recovery Regression Results, Enter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.332(a)	.110	.093	.69583

a Predictors: (Constant), Impossibility1, Divergence, Ambiguity, Ambivalence

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.176	4	3.044	6.287	.000(a)
	Residual	98.288	203	.484		
	Total	110.464	207			

a Predictors: (Constant), Impossibility1, Divergence, Ambiguity, Ambivalence

b Dependent Variable: Recovery

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.653	.223		7.420	.000
	Ambiguity	.220	.073	.231	3.024	.003
	Ambivalence	.163	.060	.227	2.712	.007
	Divergence	-.078	.045	-.121	-1.730	.085
	Impossibility1	-.086	.054	-.125	-1.607	.110

a Dependent Variable: Recovery

When a stepwise regression was used, Table 20 indicates that only ambiguity entered into the model. The model summary indicates that ambiguity accounted for 6.7% of the variance ($R^2 \text{ adj}=.067$) and was significant ($p<.001$ and $\text{Beta}=.268$). This regression indicates that support used to address ambiguity is positively associated with speed of recovery. In other words, the more an athlete learns and/or the less confusion experienced, the easier it is for an athlete to recover. The other three independent variables did not enter into the regression model, indicating support directed toward divergence, ambivalence, or impossibility will not have a significant affect on an athlete's recovery efforts.

With variables for scholarships awarded, injury length, and athlete contribution held constant, the model (using enter) remained a consistent fit ($R^2 \text{ adj}=9.1\%$) but still did not account for a large amount of variance. Scholarship money, athlete contribution, and length of injury did not significantly contribute to the model. Ambiguity and ambivalence remained significant ($p<.003$, $\text{Beta}=.230$ and $p<.007$, $\text{Beta}=.231$). Divergence and impossibility remained non-significant after the other variables were factored into the model ($p<.208$, $\text{Beta}=-.093$ and $p<.134$, $\text{Beta}=-.119$). Table 21 shows these results.

When using a stepwise regression with the above covariates, only ambiguity entered into the model. Table 22 indicates that ambiguity accounted for 6.7% of the variance ($R^2 \text{ adj}=.067$, $p<.000$, $\text{Beta}=.268$). This regression indicates that support used to specifically address ambiguity is positively associated with injury recovery. These results are indicated in Table 22.

Table 20: Recovery Regression Results, Stepwise

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.268(a)	.072	.067	.70549

a Predictors: (Constant), Ambiguity

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.933	1	7.933	15.939	.000(a)
	Residual	102.530	206	.498		
	Total	110.464	207			

a Predictors: (Constant), Ambiguity

b Dependent Variable: Recovery

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.570	.204		7.680	.000
	Ambiguity	.256	.064	.268	3.992	.000

a Dependent Variable: Recovery

Table 21: Recovery Regression Results with covariates, Enter

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109(a)	.012	-.003	.73145
2	.349(b)	.122	.091	.69637

a Predictors: (Constant), Time unable to play, Level of contribution, Money to play

b Predictors: (Constant), Time unable to play, Level of contribution, Money to play, Ambiguity, Divergence, Impossibility1, Ambivalence

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.320	3	.440	.822	.483(a)
	Residual	109.144	204	.535		
	Total	110.464	207			
2	Regression	13.478	7	1.925	3.970	.000(b)
	Residual	96.986	200	.485		
	Total	110.464	207			

a Predictors: (Constant), Time unable to play, Level of contribution, Money to play

b Predictors: (Constant), Time unable to play, Level of contribution, Money to play, Ambiguity, Divergence, Impossibility1, Ambivalence

c Dependent Variable: Recovery

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.232	.235		9.515	.000
	Money to play	.008	.079	.008	.099	.921
	Level of contribution	-.035	.069	-.039	-.507	.612
	Time unable to play	.088	.060	.102	1.466	.144
2	(Constant)	1.493	.327		4.574	.000
	Money to play	.039	.076	.037	.509	.611
	Level of contribution	-.067	.067	-.073	-.992	.322
	Time unable to play	.078	.060	.091	1.303	.194
	Ambiguity	.219	.073	.230	2.987	.003
	Ambivalence	.166	.061	.231	2.739	.007
	Divergence	-.060	.047	-.093	-1.264	.208
	Impossibility1	-.082	.054	-.119	-1.505	.134

a Dependent Variable: Recovery

Table 22: Recovery Regression Results with covariates, Stepwise

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.268(a)	.072	.067	.70549

a Predictors: (Constant), Ambiguity

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.933	1	7.933	15.939	.000(a)
	Residual	102.530	206	.498		
	Total	110.464	207			

a Predictors: (Constant), Ambiguity

b Dependent Variable: Recovery

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.570	.204		7.680	.000
	Ambiguity	.256	.064	.268	3.992	.000

a Dependent Variable: Recovery

Babrow (2001) states that orientations can and often do change forms several times throughout a negative event, depending on the experience(s) and communication involved. Results show that, although the injury is staying the same, different orientations are prevalent when referring to stress and recovery, maintaining Babrow's assumption that all four orientations do work differently depending on the situation and factors involved. This will be discussed in more detail in the next chapter.

CHAPTER FOUR

DISCUSSION

The present study attempted to uncover the types of problematic integrations that commonly form during an athletic injury and whether specific social support to minimize these integrations could lower stress and impact the recovery process among athletes. The results of this study indicated support for both hypotheses, showing that identifying and then using social support to minimize the experience of problematic orientations during an injury can help reduce stress and facilitate a quicker recovery. Although there have been several studies showing the positive effects of social support in injury situations, there has been no way in knowing what type(s) of support to provide the individual athlete because every individual is different in what type(s) of support he or she desires. This unknown element is vital since previous research has stated that support is crucial in aiding feelings of self-worth, amongst other important outcome variables.

Analyzing responses from individual athletes in the initial pilot study allowed the concept of social support to become much clearer and aid in

determining the importance of identifying individual stressors and support mechanisms for each separate athlete. The continuation of this study in a quantitative analysis further showed the common integrations that occur during an injury and the importance of minimizing them for the physical and emotional well-being of the athlete. Results indicated that a high degree of stress was experienced by injured athletes when referencing the social support received, revealing that there are differences in the perceptions of support received by athletes and their support networks. This is important to note since past research has indicated that the perceived quality of support is more important than the quantity, which means that matching athlete's needs to message types is extremely helpful during rehabilitation. That notion of quality support was a focus of this study.

The Importance of Social Support Networks

Overall, the results of this study were consistent with the results from the pilot study and concurrent with the over-arching research done concerning social support and athletic recovery. Specifically, results matched previous conclusions stating that injured athletes who perceived that they received adequate social support found the recovery process easier than those who did not share this perception. Athlete's responses also indicated that support from their respective coaches is most highly desired and crucial for a healthy recovery. This concept was further supported by athletes' responses indicating that not receiving desired support from their coaches during injury caused difficulty during the injury and an

increase in the amount of stress experienced during rehab. This concept is in alignment with past research indicating that when used effectively, social support facilitates emotional and physical stress. Results showed that emotional and listening support are the most desired by the majority of injured athletes, which makes sense considering these are the two most fundamental aspects of social support. The primary focus of the results from this study is the finding that the role of social support when rebounding from an injury is incredibly important.

The Presence of Problematic Integration Theory in Athletic Injuries

Problematic Integration Theory served as an important foundation for this study. PI theory was used to help understand how athletes evaluate their injury situation. More specifically, the theory provided an outlook on the relationship present between the communication that support network members provided to athletes, and the tensions and expectations that athletes formed in response to this presence and/or absence of communicated support.

PI theory began at the onset of athletic injuries. With initial pain, athletes immediately assessed what the particular pain indicated. A majority of athletes judged initial pain as minor. This conclusion is evident in the results showing that almost three-fourths (127) athletes practiced with pain before consulting a doctor or trainer. This finding is parallel with PI's framework, as the evaluative decisions that people make are often influenced by their desired outcome.

The results of the study showed that athletes often form evaluative orientations that are consistent with Babrow's term labeled "optimistic bias".

However, once athlete's initial evaluative orientations were found to be problematic, based on the diagnosis of an injury, initial orientations became problematic. Therefore, when an injury was diagnosed, athletes were more than likely to experience at least one of the four problematic orientations. Whether an athlete suffered from divergence, ambiguity, ambivalence, or impossibility depended on the unique injury situation, which was evident in both the qualitative and quantitative results.

Throughout the recovery process, results showed that athletes often shifted problematic orientations, which is another concept of PI theory. A shift in orientations often occurred upon injury diagnosis, misdiagnosis, support desired and received, and upon rehabilitation instructions and subsequently the results of these instructions. A shift in an athlete's focus, whether that focus was on recovery, team isolation, or coach support, easily caused a shift in orientations. Results showed a variety of emotions and concerns throughout an athlete's injury, displaying that a shift in orientations likely occurred.

The application of this theory offers several practical implications in the situation of an athletic injury. First, the importance of acting on initial pain is crucial in athletics. It is the responsibility of athletes to accurately and realistically assess the pain they are feeling. The presence of impossibility is extremely evident here, as results indicated a majority of athletes practicing through pain and trying to hide their injury. However, denying an injury often hinders an athlete's performance and makes it impractical for support networks to effectively communicate with their athletes because they were unaware of the problem.

Instead of athletes evaluating their pain with an optimistic bias, it is more important to be realistic in assessing what the pain indicates. Suggestions include consulting an expert source immediately instead of guessing or denying the situation. This immediate attention could prevent a more serious injury from developing as well.

Next, the impact of communication on an athlete's perceptions is clearly identified through the experience of shifting orientations. In a period of high equivocality, athletes are more likely to engage in more information-seeking. The implications of a coach emphasizing a quick return to competition one day and the athletic trainer focusing on physical therapy at a different time have negative effects on an athlete's physical and emotional health. Results indicated that athletes who took a longer time to recover than anticipated experienced more problematic orientations throughout their injury. Therefore, the implications from PI theory show the importance of consistent communication.

For athletes, it is imperative to ask descriptive, concrete questions that will provide answers that are beneficial for their recovery and understanding of the injury. For support networks, it is important to be educated about the injury, the rehabilitation methods needed, and the timeline of the injury's expected progression. All networks should be communicating the same messages to athletes to help combat this shift in orientations, meaning that even parents and significant others need to call and ask the coach and athletic trainers the significance of the athlete's injury.

It is evident that applying PI theory and identifying problematic orientations during athletic injuries helps assess and reduce the equivocality experienced by athletes. Now, it is important to discuss the implications these overall findings have on the specific social support required for each orientation, and the effect this support can have on lowering stress and facilitating a healthy recovery.

Supporting Problematic Integrations: Implications for Support Networks

The use of Problematic Integration (PI) Theory as a framework for this study assisted in discovering how to effectively administer the necessary social support to injured athletes. The results indicated that ambiguity, as an orientation, occurred the most among injured athletes. The next orientation the next most common was divergence, followed closely by ambivalence. Impossibility existed the least among injured athletes at the time of their rehabilitation.

Impossibility

A reason for a low occurrence of impossibility is most likely because once in a rehab program, athletes have acknowledged their injury and can not deny the situation. This result is parallel with the pilot study, as impossibility was mainly discovered as existing before the injury diagnosis in feelings of denial and continual competing while in pain. One aspect of PI theory entails the notion of orientations shifting form throughout a highly equivocal event. A shift of impossibility to other forms of ambiguity, ambivalence, or divergence appears to

take place during an athlete's injury period. Before the athlete was officially diagnosed, impossibility appeared to exist, as interviews and survey results indicated a moderate to high degree of denial prior to official diagnosis. However, as the rehabilitation process began, and throughout it, impossibility decreased. There is a possibility that, as impossibility lessened, it perhaps transformed into another orientation.

This phenomenon explains why impossibility was also the only orientation that did not show significant effects in any of the regression models. This result is appropriate, as once an athlete is finally in the rehabilitation process, impossibility is low. This means that support desired to combat the orientation would be low as well. Once the athlete accepts the injury and begins a rehab program, there is not much support that can address this specific orientation, as it is clear that the athlete is injured. Since the quantitative portion of this study focused on the effectiveness of support during the rehabilitation process, it is understandable that impossibility would not render significant results within the overall support models.

The pilot study addressed support during high levels of pain before diagnosis, and support during rehabilitation after diagnosis. Results of the pilot study found that impossibility existed before injury diagnosis. Athletes interviewed referenced desired support in the form of informational and emotional in order to reduce feelings of impossibility. A majority of athletes indicated that impossibility was often minimized when a network member stepped in and addressed the athlete, providing information about the pain they were

experiencing and encouraged them to see a doctor. It was common to find that, when impossibility existed for an athlete, feelings of denial were evident and the athlete needed to be confronted about the injury.

Divergence

Both the enter and stepwise regressions showed that divergence was significant in the stress support model, indicating that the more support addressing divergence as an orientation, the lower the stress levels during injury. Addressing limitations from the pilot study, additional variables entered into the model including athletic scholarships, injury length, and athlete contribution. Divergence remained significant, showing that this specific orientation exists among athletes of various injury situations and that support minimizing the orientation can lower stress.

The results indicate that first, since divergence had a higher mean ($N=2.8$); athletes had a considerable amount of confusion and a number of questions regarding their injury. Most notably, the results specify that divergence existed as an orientation when a member of a network, whether it was an athletic trainer, doctor, etc. either inaccurately diagnosed an athlete with an injury, or continually reported different messages on the progression of the injury. These results are shown in responses by athletes indicating that the conflicting diagnoses and injury lengths significantly lengthened the athletes' rehabilitation program, affected their athletic identity, and increased their stress levels, all contributing to the results of the stress support model. These results show that

not knowing the specific injury or program to follow can be a very stressful experience for an athlete.

Since results showed that support to combat divergence can aid in lowering stress levels, it is important to know what type of support athletes desire in reference to minimizing this particular integration. The best advice for athletes' support networks is to diagnose the injury as quickly as possible. The pilot study indicated that as the discovery process lingers, divergence is likely to increase. More importantly, however, the variables from the quantitative analysis point to consistent messages about injury severity and length to be the most crucial factors in minimizing stress. Therefore, support networks should be encouraged to avoid downplaying an athlete's injury, as this might instill "wishful thinking" in the athlete. In response, an athlete may develop unrealistic expectations regarding the time frame until he or she is able to return to his or her sport.

More specifically, informational support is found to be the best in minimizing divergence. A particular subset of informational support that may be the most beneficial in regards to divergence is reality confirmation. If a support network consistently keeps the injury in a clear focus and acknowledges the injury's existence and progression, an athlete's stress could significantly decrease.

Although divergence was not significant in the recovery support model, it should be noted that athletes indicated high stress levels in regards to hearing conflicting messages about their rehabilitation programs. Results also indicated that inconsistent messages about the injury diagnosis and length had a negative

impact on their recovery process. This shows that support for minimizing divergence may offer some implications in helping athletes recover.

Ambiguity

Overall, ambiguity, as an orientation, was experienced the most among injured athletes. This is not surprising since past research has documented athletic injury as a very uncertain and equivocal time for athletes. Every regression analysis conducted for the stress and recovery models showed that ambiguity was significant. These results point out that support addressing ambiguity as an orientation can both lower the stress levels of an athlete during injury and aid in a quicker recovery. Knowing that ambiguity is prevalent among injured athletes, and that minimizing its' occurrence has a positive impact on recovery, has the potential to be useful for support networks.

Support combating ambiguity during an athletic injury could be quite daunting considering the range of uncertainties an athlete may face. However, results from this study offer some specific areas where athletes consistently faced ambiguity during rehabilitation. Most importantly, results indicated a large discrepancy in the recovery time frame athletes were given. Specifically, the return to competition date athletes were given was rarely close to the actual return date. When these two dates are very divergent, a period of high uneasiness and uncertainty exists. Having a long time-frame of high equivocality can be risky because in periods of high uncertainty, an individual may be more susceptible to developing additional problematic orientations. Therefore, it would

be beneficial for support networks to avoid providing a wide range of injury length (Example: 4-12 weeks). Although this diagnosis may be true, athletes are more likely to aim for a four week recovery time, leaving a potential eight weeks of high uncertainty, which may cause additional emotional and physical stress.

Another area in which athletes appeared to experience ambiguity pertains to the injury diagnosis. Results showed that the number of athletes who were improperly diagnosed was extremely high. A wrong diagnosis can create a potential for athletes to further injure themselves by continuing competition or providing rehabilitation instructions for the wrong injury. Similarly, a high number of athletes reported not receiving both a clear, easy-to-understand explanation of their injury diagnosis and a rehabilitation program to follow. These two points illustrate the lack of communication that may be occurring among athletes and their support networks. It is clear that support in these areas needs to be altered since additional results regarding ambiguity as an orientation indicated a high degree of stress and hinder recovery efforts and motivation.

Given the wide range of types of uncertainty that may exist during an athletic injury, it is understandable that the results indicated that all three types of support were helpful in lowering stress and aiding recovery. First, questions pertaining to emotional support showed that athletes perceived that they received little emotional care during their injury. This is consistent with the fact that the results showed just as many negative messages being received as positive messages during rehabilitation. Therefore, results demonstrate a large need for emotional comfort during rehab, meaning members of support networks need to

continually provide comfort and indicate that they care about the athlete and their athletic future. This finding implies that doing as little as providing a few extra notes of positive encouragement and communicate that the athlete is engaging in the correct recovery procedures could aid in reducing stress and increasing motivation to recover.

Results found that informational support is highly desired by injured athletes. Outcomes from both the pilot study and quantitative analysis show that athletes strive to receive support in the subsets of both task appreciation and task challenge. Task appreciation is a type of informational support that acknowledges and expresses appreciation for one's efforts. Similarly, task challenge is a type of informational support that provides challenges and creative ways to motivate the supportee.

In order to provide these types of support, members of networks are encouraged to acknowledge an athlete's recovery by clearly stating what is best for them and communicating that they are approaching rehab correctly. It is also suggested that supporters provide new types of recovery workouts on a regular basis to consistently challenge the injured athlete. This suggestion is based on the results indicating that athletes appreciate the involvement of their support networks in their rehab efforts. The support in the form of continual communication and high involvement has a positive affect on athletes.

An interesting discovery is the need for tangible support desired by athletes. This area of social support was not identified in the pilot study but showed a high degree of frequency in the quantitative results. This tangible

support appeared to be most beneficial in the form of personal assistance. Athletes reported feelings of increased desires to communicate with their coach(es), athletic trainers, and doctors during their injury in order to receive expertise and knowledge regarding steps in order to recover more quickly. Overall, this implies that the more "expert" information, the better, when providing social support to injured athletes.

It is suggested that since ambiguity can take several forms and occur in countless situations, support network members refer to the complete results of the pilot study (Appendix C) and reference some of the common, specific situations in which ambiguity may occur during an injury.

Ambivalence

Ambivalence, as an orientation, occurred a moderate amount among injured athletes. This orientation was a statistically significant predictor in the stress support model, indicating that the more support addressing ambivalence, the lower the stress levels during injury. Addressing limitations from the pilot study, additional variables entered into the model including athletic scholarships, injury length, and athlete contribution. Even with these variables factored into the model, ambivalence was still significant, showing that this orientation exists among athletes of various injury situations and that support minimizing the orientation can help lower stress.

The consistent event causing ambivalence for athletes was the occurrence of the same support network member varying his or her message

throughout athletes' recovery route. These varying messages had a significant impact on injury stability for athletes and increased stress levels. Implications from the pilot study showed that one way to potentially prevent ambivalence from occurring during an injury was to pick one person's advice to which to adhere. However, this implication was found to not be very reliable in the quantitative analysis based on the moderate number of athletes who reported listening to one person's advice and still receiving mixed messages from this same person. Therefore, implications in the current study demonstrate the need not only for informational support, but consistent informational support providing dependable messages about the injury diagnosis, status, and rehabilitation program.

It is possible, however, that even if a support network member offers consistent messages to an athlete, he or she may be wrong in the initial injury diagnosis. Although questions regarding this event were not present in the ambivalence variable, they were addressed in the area of divergence. As explained earlier, inaccurately diagnosing an injury was a common cause of divergence and negatively affected recovery. Although there is no sure-proof way to prevent a misdiagnosis, constant communication and monitoring the injury would most likely increase the likelihood of identifying an error sooner. This event shows another situation in which problematic orientations can suddenly change forms. Ambivalence can quickly change to divergence in the case of an injury misdiagnosis.

Moving on to the recovery support model, ambivalence was a statistically significant predictor in the enter regression model, with and without the additional

covariates and in the initial stepwise regression. However, when using a stepwise regression with covariates, the orientation failed to enter. After further examining the results, it was found that conflicting messages had a negative impact on recovery efforts. Results also revealed that consistent messages had a positive impact on recovery efforts, demonstrating why ambivalence initially entered into the model.

However, questions that aimed to identify the importance of emotional support in preventing ambivalence were not significant. These questions addressed the relationship between administering positive, clear messages and ease of recovery in comparison to negative messages and ease of recovery. The low means for these questions show a nearly non-existent effect on the athlete.

Results found that using emotional support to reduce ambivalence during an injury was not very effective. However, informational support was important in preventing ambivalence. A key rationale for consistent messages during injury was indicated in the results showing that receiving different messages caused athletes to develop mixed feelings regarding their own injury and recovery efforts. It is important to minimize such feelings because past research on athletic recovery shows that mixed messages regarding an injury may instill doubt in an athlete. As a result, mixed feelings or high degrees of uncertainty could foster an environment where it is easier to shift integrative forms and/or develop new problematic orientations altogether. For these reasons, informational support should be delivered in the form of similar, clear, and knowledgeable messages.

Practical Use: Overcoming an Athletic Injury

After discussing the specific types of social support needed to prevent problematic orientations from occurring and types of social support desired to combat problematic orientations to facilitate a healthy recovery, it is imperative to provide practical suggestions for how to use this information. While it is impractical to be able to prevent athletic injuries from occurring, this study discovered valuable information on how to facilitate a supportive environment conducive to athletic recovery.

Since the overall results of this study indicate that the problem is not only the absence of communication between coaches and athletes or trainers and athletes, but all members involved in an athlete's recovery process, the remainder of the discussion provides information relevant to every network. The subsequent section contains advice for athletes and individual social support network members all involved in an athletic injury in some approach. Suggestions are supported by the findings in both the qualitative and quantitative studies. By following some of these basic guidelines, it is believed that injured athletes' stress will significantly decrease and recovery will be eased.

Guidelines for Coaches

1. Create an open environment for communication. By continually welcoming comments from athletes and emphasizing to them the importance of listening to their bodies and addressing concerns right away, athletes may feel more comfortable about approaching a new problem.

2. Communicate on a daily basis. Even if the injured athlete is forced to workout in a separate facility, continually ask how the rehab is progressing and address any concerns.
3. When an injury occurs, athletes lose a huge part of their identity. Often, they lose a feeling of accomplishment. Continue to challenge athletes outside of their sport. Give them hard cross-training workouts and consistently facilitate an environment that still gives the athlete a feeling of success. This way, even though the athlete has lost some resources, some of their identity as an athlete may remain in-tact.
4. Keep an open line of communication with the trainers/doctors. Obtain a recovery timeline from them in order to ensure that the athlete is not lying about their progress. This may enable proper support at every recovery stage.
5. Try as hard as possible (within budget constraints) to include the athlete in normal areas of the sport. If healthy enough, the athlete should travel to all practices and competitions. Do not take away this resource as it may put the athlete in an isolated environment, increasing stress and lowering motivation to recover.
6. Provide additional resources as necessary. It is important to make available to the athlete any extra articles, websites, or people viewed as probable constructive influences on the recovery process. The more an athlete learns about the injury, the more motivated, less confused, and

less stressed the athlete will be. This further indicates the importance of knowledgeable communication.

Guidelines for Athletic Trainers/Team Doctors

1. Try to avoid an initial/preliminary diagnosis until the necessary tests are performed and received or a higher source is consulted about the athlete's symptoms. This may lower chances of a misdiagnosis and the chance of wishful thinking on an athlete's part.
2. Avoid administering specialized treatment until the injury diagnosis seems to be completely accurate in order to ensure that rehabilitation methods will not cause further pain.
3. Be as descriptive as possible when explaining the athlete's recovery steps. Every athlete's recovery process will be different. To ensure consistent communication and certainty, map out a timeline of the athlete's recovery process including rehabilitation instructions, symptoms of recovery progression, and pain tolerance levels experienced. Share this timeline with the athlete, coach, and other support network members.
4. Treat every complaint from an athlete seriously. Avoid using vague language at the onset of pain, as this may instill a false sense of hope in the athlete.

Guidelines for Teammates

1. Do not let an injury hinder the levels of communication previously engaged in with the injured teammate. Continue to discuss the practices, workouts,

and competitions. Isolating these experiences from an athlete puts them at risk for depression and stress, both physically and mentally harmful.

2. Ask the injured athlete how his or her separate recovery workouts are progressing. Give the athlete a chance to talk about any challenging exercises in which he or she is engaging at the particular stage of their rehab.
3. Continue inviting injured athletes to team events outside of school-related events. Keeping these outside communication lines open will allow the athlete to engage in a relaxing environment where the athlete feels appreciated and valued, since lack of participation in the sport may create negative feelings of self-worth.
4. Do not project personal, past injury experience onto the teammate's current injury experience. Avoid giving an in-depth description of past recovery processes because every individual is different. The discrepancy in experiences can instill wishful thinking or negative thoughts in an athlete, which both foster the formation and shifting of orientations. Instead, focus on communicating understanding of the injured athlete's current experience and feelings about it.

Guidelines for Support Members outside the Athletic Field

1. If anything is brought up from an athlete about initial pain, encourage the athlete to consult an expert source, such as the athletic trainer or team doctor.

2. Upon injury diagnosis, call the coach and/or trainer in order to better understand the implications the injury may have on the athlete. Depending on the injury situation, the amount and kind of emotional support desired may vary.
3. Do personal research on the specific injury. There may be tips on what can be done to facilitate a quicker recovery. Information will also help in knowing what to expect in the near future.

Guidelines for Injured Athletes

1. At the onset of pain, consult an expert network immediately. Avoid denying or hiding an injury, as these actions often prolong injury diagnosis or speed up the arrival of a more severe injury.
2. Ask for guidance. Do not be afraid to seek out your coach, trainer, or other expert for information regarding the injury or rehabilitation needed. Even though the loss of activity may result in more spare time than prior to the injury, the coach is still busy with the rest of the team members. This means that the injured athlete may have to take additional steps not previously necessary to effectively communicate with the coaches and others.
3. Stay positive and be surrounded by positive people. A positive mood enhances recovery efforts.

Limitations of Study Two

While some limitations from the pilot study were specifically addressed in the subsequent study, limitations still existed. First, it was difficult to assess how honest athletes were who took the survey. It is possible that questions were not read carefully or misunderstood. It is also possible that because of the way certain questions were phrased, participants were influenced to answer a certain way. The questions may have been leading. The measuring instrument was a self-report questionnaire, which is always potentially subject to social desirability biases.

Next, several confounding variables could have been involved at the time of survey completion, including the athlete's stage in the rehabilitation process, past injury history, and specific diagnoses that may have occurred the day of survey completion. All of these issues could affect the degree of stress an athlete may feel and specific emotions regarding the injury. However, limiting the study anymore would have rendered data collection near impossible. Also, the sample size could have been larger, which may have led to higher R-square adjusted values.

Other limitations of the study include not being able to compare general differences in injury experiences among sport, gender, school, and age. These basic demographics were excluded from the survey in efforts to gain IRB approval and insure anonymity; doing so however, limited the analyses and implications that could be provided relevant to specific athletic groups. If more background information had been gathered, perhaps results might have been

different. Along these same lines, the sample consisted of schools mainly in the Midwest, eliminating many other demographic areas in the United States.

Most importantly, a primary limitation in this study is the individual preference of each athlete. Some athletes may desire more support than other athletes, while some coaches and trainers may provide more or less support than others. Two athletes may be receiving the same support from their coach but one could perceive the support as useless and the other sufficient based on individual need. This makes it difficult to generalize about the types of support that should be provided to every athlete, which again, points to the importance of constant communication during an injury.

Directions for Future Research

There is still a plethora of research that should be done regarding the formation of and support of orientations during athletic injury. It is recommended that a study be done focusing on athlete's experiencing an injury for the first time. This way, athletes may not focus on comparing their injury situations, but on the emotions of their current injury. It is also recommended that a study be conducted on athletes that are currently injured so that feelings of stress and recollection of rehabilitation can be more reliably gathered.

In addition, since ambiguity was experienced among a majority of athletes, it is suggested that subsequent research focus specifically on ambiguity as an orientation among athletes. Since ambiguity is very broad, perhaps a study

focusing on just this orientation of PI theory can provide more in-depth, specific results concerning support to prevent feelings of uncertainty.

Another suggestion is to include doctors, coaches, and/or trainers in a study similar to the one performed. Interviewing coaches about the type of support they provide and perceive as being helpful to athletes could add valuable information to this area of study. Questioning an injured athlete in addition to his or her coach and comparing helpful versus non-helpful support may help establish individual communication lines between the two networks.

It may also be beneficial to perform research on younger athletes. Most research has focused on college-level and professional-level athletes. In high school, athletes may have different support networks because they are still living at home. It would be interesting to see, however, if similar problematic orientations still exist at a lower level of athletic competition and if the degree of support has as much of an impact on minimizing them as is apparent in the present results.

Finally, the bulk of social support research regarding athletes has been conducted on the importance of coach-athlete communication. While coaches are a vital support resource for athletes, not much research has been done with a focus on other members of support networks. Specifically, results from the pilot study showed a large emphasis on teammate support. Dedicating a study to specifically examining the importance of inner-teammate social support and the implications of possibly preventing stress and/or injury and helping athlete recovery may be particularly interesting.

Conclusion

The practical implications resulting from this study show just how complex an athletic injury can be. An interesting and significant discovery from this study is the overall lack of communication between all athletic group members. The main cause of many problematic orientations during injury is not only lack of communication between members of support networks and athletes, but also the absence of consistent communication among different members within an athlete's support network. It is imperative to understand the importance of communication during an athlete's recovery.

For example, the deficient communication between a coach and athletic trainer has severe repercussions on an athlete's emotional and physical stress and recovery process. It is believed that increased communication between support network members will allow supporters to more easily identify the concerns and feelings an athlete may have.

Additional communication efforts are also needed by the athlete. Without regularly attending team workouts and competitions, communication is likely to decline. In order to gather the information desired and maintain the relationship prior to injury, an athlete will need to do some additional footwork. Preserving the communicative relationship throughout recovery with phone calls and private meetings will likely reduce stress and ease recovery.

Next, supporters consisting of coaches, trainers, and doctors alike should all be able to ask questions to better understand whether an athlete is concerned with the complexity of the injury, the implications of the injury, or what to do to

facilitate recovery. Through such increased effort to discover exactly what problematic orientation(s) an athlete is facing, a support network member can better provide the desired support.

This study offered practical suggestions for many people to encourage a strong recovery. It is hoped that this study provided further information for how support networks may help lower the stress levels experienced by injured athletes and also aid in a quicker recovery. Considering the increasing numbers of athletic injuries occurring, it is hoped that suggestions offered in this study may make a contribution toward fostering a physically and communicative healthy environment for athletes.

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APPENDIX A

2006 Injured Athlete Survey: Social Support

1. What is your gender? Female Male
2. What is your sport?

3. What is your race (Caucasian, African American, Hispanic, etc.)?

4. What is your coach's gender? Female Male
5. Are you on an athletic scholarship? Yes No
6. What is your current injury, or injury you recently had?

7. Classify your injury under one of the following categories:
Minor (3-7 days) Moderate (8-21 days) Severe (22+ days)
8. I have a history of having several athletic injuries in the past
Strongly Agree Agree Neutral Disagree Strongly Disagree
9. How much pain did it take for you to seek help from an athletic trainer or doctor?
Very Little Amount Moderate Amount A Great Amount
10. Did you try and hide your injury from your coaches and trainers?
Yes No
11. Did you feel a certain amount of pressure by your coaches to participate while you were hurt?
Strongly Disagree Disagree Neutral Agree Strongly Disagree
12. Before my injury my level of stress was approximately:
No stress at all 1 2 3 4 5 Extremely high stress

13. Before my injury, I felt satisfied with the amount of support/attention from my coach.

Very dissatisfied 1 2 3 4 5 Very satisfied

14. During my injury my level of stress was approximately:

No stress at all 1 2 3 4 5 Extremely high stress

16. Circle any words that applied to you during the time of your injury while recovering

confused stressed anxious depressed angry important

isolated lonely sad uncertain doubtful cared for

17. During your injury, rate from 1 to 5 who provided you with the most support.

Coach _____

Athletic Trainer _____

Teammate _____

Family Member _____

Significant other _____

18. I felt cared for during my injury

Strongly Agree Agree Neutral Disagree Strongly Disagree

19. The support I felt from my coaches helped lower my stress levels during my injury.

Strongly Agree Agree Neutral Disagree Strongly Disagree

20. How satisfied were you with the amount of support/communication you received during your injury from your coach helped speed up my recovery process.

Low Satisfaction 1 2 3 4 5 High Satisfaction

APPENDIX B

2006 Injured-Athlete Interview: Addressing the issues of PI

1. Divergence

- A.) Did you have conflicting ideas about how long your injury was going to be versus how long your trainers and doctor said it would be?
- B.) What kind of feelings did you have about this issue? (Examples are being confused about when you were going to return to your sport, frustrated that you felt differently than they did, etc.)
- Is there anything anyone could have said to you that would have made you feel better about the conflicting time issue?
 - Were the feelings you experienced because of a difference in time perceptions increase your stress levels?
 - If your thoughts about how long your injury would take to heal matched up to with what everyone else was telling you, would you have felt less stress?

2. Ambiguity

- A.) When you became hurt, were you confused about your future athletic competition that season? Please describe your confusion.
- B.) Was your future as an athlete unclear? If yes, please explain.
- C.) Did you know how serious your injury actually was?
- D.) Were there questions you had that were not properly answered by your coaches, doctors, or trainers? If so, what types of questions?

- E.) Did people such as your coach, doctor, or trainer communicate with you about how you were going to recover the quickest? Or was there not very much communication about recovery?
- F.) If your coach or other social network communicated with you more about your injury, do you think you would have felt more in control of your injury?
- By communicating more with your coach, doctors, and trainers, do you think your confusion would have decreased?
 - If you were more clear about your injury and what it was, do you believe you would have been under less stress, more, or the same amount?
 - Would having more knowledge about your injury motivate you to recover quicker?

3. Ambivalence

- A.) Were people (such as your coach, trainer, doctor, parents, teammates) telling you conflicting facts about your injury? (An example may be a teammate saying how long it took them to recovery from the same injury versus the doctor telling how long you it would take you).
- B.) If yes to the previous question, what kinds of conflicting messages were you receiving?
- C.) If you were hearing different messages, did the different ideas from people confuse you?

- Do you think receiving the same messages from everyone, such as your coach, trainer, and doctor, would make you feel more secure about your injury?
- Did receiving different messages increase the stress you experienced about your injury?
- What kind of things did you want to hear during your injury that would have made you feel better?
- Did you tend to pick one person's advice (doctor, trainer, coach, parent, etc) and believe it over everyone else's?
- Do you think that receiving one consistent message from people during your injury would decrease the stress you felt?

4. Impossibility

- A.) Did you experience any denial when you got hurt, telling yourself that you were not hurt and could still compete? If so, how long did you practice before telling someone about your pain?
- B.) After you went to the doctor and your injury was confirmed, did you experience denial/anger? If so, please describe your feelings.
- Who comforted you the most during this time?
 - Did you receive positive or negative message from people around you?
 - What would be the ideal type of support for you to receive to help you overcome your denial?

- Do you think that receiving positive message from your coaches; teammates, etc. would aide in decreasing stress? And increasing your motivation to return quicker to your sport?

APPENDIX C

Complete Pilot Study Results: An in-depth discussion

Divergence

Divergence occurs when there is a discrepancy between what an individual wants to happen in comparison to what is actually happening. Typically, when an object is clear and no questions exist, divergence ceases to exist. However, for athletes, feeling pain in addition to having difficulty getting questions answered regarding what or why they were having the pain, divergence commonly developed as a problematic orientation. Upon interviewing athletes, eleven of the 22 experienced high divergence and six moderate divergence. Therefore, over half of those interviewed encountered divergence as an orientation that was perceived as a hindrance in their recovery ability.

For these seventeen athletes, divergence occurred at the onset of injury because many knew immediately that the odds that something bad had just happened (an injury) were unfortunately high. At this point, athletes constantly sought out knowledge from professionals to discover the source of their problem and/or object. Every athlete interviewed consulted a professional in order to obtain more knowledge about his or her injury. At the commencement of divergence, some common feelings reported from the athletes were frustration, anger, and disappointment. The athletes who displayed the most feelings of divergence were those who under-went a longer diagnostic process. Naturally, as the probability of injury severity increased, so did the negative association with the injury—igniting higher divergence.

Further, eight athletes experienced divergence with a “wishful thinking” mindset. One case pertaining to wishful thinking occurred frequently during interviews regarding the athletic injury. Several athletes consulted a trainer or doctor in hopes to receive a diagnosis for their pain immediately—thinking that since the injury (object) was discovered and addressed early, they would return to competition sooner. However, the process of diagnosing the injury took longer than expected for many athletes, increasing the divergence encountered because no clear answer was available.

Below, is a depiction of divergence and the wishful thinking mentality of a volleyball player:

At first, trainers suspected I had a tear...then I went to the doctor and he made me get an MRI. Nothing showed up in the MRI and the doctor told me my pain was not serious and I was fine to practice. The only thing I was ordered to do was go and get normal treatment in the training room and the knot I had in my arm would dissipate. Later, when the pain didn't go away, the doctor looked at the MRI again and saw something. That's when I was told I had a tear in my shoulder. All of a sudden I had to pick between a surgery that might not work or dealing with a pain that might not ever go away.

This excerpt represents the beginning stages of divergence. The athlete attempted to find out what was wrong with her to become healthy. For this specific problematic orientation, the divergence was strong from the beginning because this volleyball player engaged in “wishful thinking.” At first, she was

given false hopes by the doctor of having a minor pain; however, when the pain continued to linger after prolonged treatment, this athlete knew that something more severe was wrong. The doctor's misinterpretation of the MRI caused this athlete to have an unrealistic outlook of her situation, thinking she could continue competing while receiving minor treatments. Once she discovered that this was not the case, she experienced not only divergence, but also became uncertain about the outcome of her surgery and faced the impossibility of competing.

In a similar incident, one athlete went in for a simple surgical procedure, when during the surgery; doctors discovered a tear of which they were not aware. This finding quickly turned her minor surgery into a major operation. This new-found injury changed this athlete's suggested rehab time of one to two weeks before the surgery, to over eight weeks of rehab. Obviously, a major change in the athlete's injury orientation occurred.

However, wishful thinking in relation to divergence existed even when doctors were able to give a clear estimate of recovery time. In a few cases, athletes thought they would recover quicker than the average athlete. This pattern of optimism existed in the majority of first-time injured athletes. One athlete who experienced her first major injury stated, "I thought it was a small injury, but it turned out to be huge. I had no idea it was that bad." Even after this particular athlete saw the doctor and her injury was confirmed, she still had high hopes that she would be back sooner and did not take the doctor's diagnosis seriously. This type of divergence proved to be unhealthy for injured athletes. Since they (athletes) were unable to accurately assess their injury and rehab

time, they were never able to develop a healthy outlook for their situation. Without developing a knowledge orientation for their injury, several athletes continued to hang on to every thread of hope that they would be able to practice the next day.

Many athletes reported going through a several month process of hearing different messages regarding their injury. As time went on, the divergence increased. One athlete stated, "I kept getting more and more nervous about what was wrong with me and how it (the injury) was going to be. Everyone just kept telling me to wait it out." Reports from the high divergence athletes said that before their injury was diagnosed, the various messages they were receiving from people caused their stress levels to dramatically increase. Athletes contributed their high divergence and stress rate to the different scenarios from doctors and trainers. One athlete explained his thought process as, "Hearing so many different variations of what may be wrong made me feel that no matter what, something was seriously wrong and no one can figure out what it is." As a result of hearing the different diagnoses, participants claimed to feel insecure and uncertain about their future as athletes for the upcoming season.

While conversing with athletes who experienced high divergence as a result of injury diagnosis, a similar pattern of support and desired messages emerged. Several athletes stated that not knowing their injury type was their most stressful issue. They stated that they would have felt less stress if the messages about the name of their injury and how long rehab time was, matched up with what their supporters were telling them. The experience of being told

something different by every person created high divergence and confusion. However, once the athletes discovered why they were experiencing pain, or in other words, discovered what their injury (object) was, their stress immediately decreased. One athlete claimed that if everyone's thoughts about how long his recovery time was going to be were similar, he would have felt more confident about his athletic stability. However, since expectations were unclear, stress increased.

In some situations, it appeared difficult to control this condition of PI. The best way to keep divergence to a minimum in athletic injuries came from diagnosing the injury as quickly as possible and communicating with only one medical expert about the situation. Ten of the athletes interviewed said that the diagnostic process was too slow and thought it (the process) hindered their recovery progress. One basketball player said, "The trainer thought that I had a pinched nerve, much less severe than a joint sprain. Not knowing how bad it (the injury) actually was prolonged the problem." Further, upon diagnosis, the varying messages hindered the process even more. It appears that it would be in an athlete's best interest if their coach or trainer could treat the injury as a severe situation before it was diagnosed in order to get the problem established early and then give the injury proper attention and care. This way, rehab could begin sooner and the athlete would have a clear understanding of why he or she is experiencing pain, which in effect, could minimize divergence.

Ambiguity

Ambiguity is defined as the amount and type of uncertainty felt about the particular situation one is experiencing (Babrow, 1995). Athletes experienced a wide range of uncertainty as a result of their injuries. Uncertainties included duration of injury, type of injury, rehab options, how their coach and teammates felt, and whether or not they would be a starter upon their return. A majority of the uncertainties experienced by athletes were expressed in epistemological conditions—with the athletes trying to obtain as much knowledge as possible about their injury. The most common forms of epistemological concerns involved obtaining sufficient information that was clear and precise, and information that was reliable and valid. This type of information was sought out by confronting experts, such as doctors and trainers, about the particular injury. To help establish reliability and validity, athletes also strove to find consistent and believable messages. Every athlete interviewed experienced some type of uncertainty, with sixteen of the 22 athletes experiencing a variety of very high levels of uncertainty.

One type of uncertainty experienced by athletes was social uncertainty, in which athletes were unsure of the consequences that would stem from their injury. Often, a social barrier formed during the injury, which led to confusion of who to listen to while recovering. One football player's ambiguity augmented when the trainer told him he could play, his teammates and friends told him it was stupid to play, and his coach was apprehensive about saying anything. This may indicate that the best way for this condition of PI to diminish is to pick one

person to whom to consistently listen. Twelve of the athletes listened to a little bit of what everyone said; and these same athletes were the ones who suffered higher levels of stress and confusion. However, there were six athletes who adhered to only one person's advice and consequently, felt they had more control over their injury. So, in this type of uncertainty, only the athlete has a say in how confused they can end up being. Picking the supporter most trusted could help reduce uncertainty in an injury situation.

Ambiguity was consistent, as many athletes stated that no one knew what was precisely wrong with them and why they were feeling the particular pain. Because of this uncertainty, the athletes were also unsure how long they would be out of competition. One athlete interviewed was given a recovery period of four to six months. This time length created uneasiness because, if the injury took four months to heal, she could still compete for part of the season. However, if it was six months, she was going to miss the whole season. As a result, for at least four months, this athlete faced continuous uncertainty as to whether or not she would be able to play in the opening game. Not knowing a more specific recovery time frame increased the stress of most people interviewed, as almost all of the athletes claimed that stress would have been significantly lower if they knew more about their injury recovery and rehab situation.

Moving on, it was found that a lack of knowledge and communication about injuries caused a majority of athletes to question their individual rehab methods. However, the athletes interviewed who received constant support and communication from advisor networks believed that their rehab program was

beneficial. These same athletes were also more motivated and adhered to their recovery exercises recommended by others. The athletes who did not receive any in-depth information or support about what and why it was important to follow their rehabilitation program expressed difficulty in finding motivation and reason for doing it (rehab) on a daily basis.

The interviews provided strong evidence that communication between networks offering high informational support can reduce the uncertainty that arises in the form of problematic orientations—which helped guide athletes through their recovery much easier. Even though at times it is not possible to provide athletes with all of the information desired, it is important that the individual feels that he or she knows everything that the doctor knows. One football player stated:

The communication regarding my rehab from the doctor and trainer was really good. They stressed the importance of rehab. If they didn't emphasize it, I probably wouldn't have done it that much. Their stress on the subject kind of set off a trigger in my head that it (the rehab) was something I needed to do...so I stuck with it.

This statement argues that informational support helps reduce athletes' uncertainty about their injury and not only influences their motivation to recover, but also gives them hope regarding a healthy return to their desired sport. Fourteen other athletes desired the type of support this football player received. They all wanted more information from their coach as to why and how their cross-training workouts were supplementing the sport they were missing. One

cross-country runner stated, "If my coach would have told me how swimming was replacing running workouts, I would have wanted to do them and also felt more confident about coming back from my injury." This type of support could be categorized as both an emotional challenge and comfort, where the coach provides words of encouragement, showing that he or she cares about the athlete. However, at the same time, the coach is also challenging the athlete to evaluate his or her passion for his or her sport and do whatever possible to return quickly and in competitive shape. Since the interviews showed that clear and honest communication can play a significant role in reducing an athlete's time in rehab, it is important for doctors, trainers, and coaches to have open lines of informational support, providing athletes with answers to the best of their knowledge.

Similarly, the athletes who experienced significant ambiguity as a result of not knowing their injury or length of recovery reported a pattern of little communication between them and their other networks. Twelve of the athletes complained that there was not a lot of communication with anyone and the trainers and doctors told them to just "do his/her own thing." These same athletes reported that more communication pertaining to answering questions regarding the injury would have resulted in less stress.

Besides just receiving the information necessary about the injury and rehab process, having an actual support network available proved to be effective for several athletes. One football player said that his dad took care of him, making sure that he did the proper exercises. He (the football athlete) stated, "I

don't think I would have done them if he (my dad) didn't tell me that I needed to do them." Other common supporters that helped athletes during the rehab process were trainers and other injured teammates.

Athletes who suffered from more severe injuries were not only concerned that their injuries might not be amenable to surgery, but that even day-to-day functions would be impaired. One athlete stated:

I didn't know if the surgery was going to be successful because only one like it had ever been performed. There was a possibility it may have not helped. I went into surgery not even knowing if the procedure would be the answer to my problems

Three other athletes claimed they had no idea of their injury or its severity until doctors performed exploratory surgeries to find the problem. Because of the uncertainty, many athletes played until the pain was so bad that even normal activities such as typing were impossible. By that time, extreme ambiguity about their future existed.

Uncertainty arose as a problematic-orientation when athletes worried about their position on the team once they were healthy. A softball player stated, "Not knowing when and how well I'll return is emotionally draining and depressing." This uncertainty haunted the athletes interviewed. Not knowing if they would be able to perform at the level they previously had before their injury was a huge stressor during the rehab phase. The freshmen and transfer players on teams felt more stress over this issue. One athlete expressed that since he was a new player, he was not guaranteed playing time. He said, "I already

earned that playing time when I first got here, and now I have to earn it all over again." A combination of eight new and/or transfer athletes reported that more encouragement and support from their coach and assurance from him or her that they were still needed and an asset to the team, would have been a tremendous help in confidence levels during injury and upon return.

In addition, more than half of the athletes questioned their coach's opinion and feelings about the injury situation. They (the athletes) felt anxious that their coaches did not believe that they were actually hurt and instead, were merely trying to get out of practice. Several athletes felt like they were ignored by their coaches completely. One athlete said, "It's hard being uncertain about what other people think about my talent and capability to play." Another concern by athletes was that their coach thought they were faking injury. One cross-country runner said that she would have liked to receive more words of confidence from her coach—she felt unimportant and on her own every day. The lack of communication from her coach raised the stress levels and ambiguity of her place on the team.

During their injury period, many athletes desired support they did not receive. When talking with a soccer player, I asked him if there was any type of communication he desired during his injury that would have helped him feel more clear and confident about his future. He stated that during his whole rehab phase, he was waiting and hoping for a phone call from his coach. Finally, toward the end of his recovery, his coach made a simple phone call to ask how the athlete was doing. The coach expressed to the athlete that he (the player) was

taking the right precautions and reassured him regarding his recovery procedure. The coach also specifically stated that he had confidence in his ability to return strong and remain in the lineup. At this point, the soccer athlete felt a huge sense of relief and claimed that, at that point, any stress he had ceased to exist.

Another example is shown below of how support from coaches, whether informational or emotional, provide to be the most effective source to reduce various types of uncertainty. A basketball player stated,

My coach would call at random times, which would help a lot. The support from him helped lower my stress and definitely motivated me to recover quicker. I stuck to my rehab because my coach and everyone else kept telling me they wanted me back. I actually ended up coming back ten days earlier than expected and I know that they (my supporters) were all a part of it.

Additionally support to this concept is sustained by a softball player, who used a direct quote from her coach as reassurance that she (the athlete) was doing the right thing. Her coach said, "You can only control what you can control, so do what you can do today, and each day you'll do more and more." This athlete claimed that listening to and repeating this statement helped her adhere to her rehab procedures, and gave her assurance that she would become healthy. It also helped her believe that her injury and delay in return were not her fault. This example demonstrates the powerful impact coaches' words can have on a player, which is why coaches should constantly analyze what their athletes may want or need to hear.

All athletes interviewed stressed the importance of coach-athlete contact during injury. The use of positive emotional support in the form of communicating with athletes regarding their rehab progression and reassurance that they are missed, created more optimism among the athletes and assured a more speedy recovery. In particular, athletes craved the type of informational support labeled, "task challenge" from their coaches and doctors. After providing ample information about an injury and their ability to recover, the supporter then challenges the athlete to push past his or her comfort zone. Task challenge requires ample information about the injury, which may be why athletes desire this type of support on a consistent basis.

Based on feedback from athletes, when types of uncertainties create confusion and nervous anticipation about future competition, more communication from the coach helps address this ambiguity. Once these athletes became hurt, they complained that some of their coaches never told them whether or not they would be in the lineup in the upcoming season. It appears that athletes often lack the informational support from their coaches that they so strongly desire.

The last major uncertainty addressed by athletes was the issue of their teammates. Injured athletes often put a heavy emphasis in teammate's comments and the relationship bonds formed while competing together. Many athletes were nervous that the injury would cause the bond formed with teammates to become weaker, adding another stressor for the athlete. However,

if the bond is maintained, it seemed to positively affect the injured athlete. One athlete claimed,

I feel like my teammates helped lower my anxiety and uncertainty because they showed up and understood I was hurt and were encouraging about it. If I didn't have the support I did in the training room and from teammates, I would not have gone to rehab because it would have seemed pointless to do so.

Concluding, it was observed that support from coaches and teammates addressed the athlete's ambiguity regarding whether or not they were going to be "replaced." Once this uncertainty was clear, Babrow's second orientation, ambiguity, vanished from the athlete's perception, as they began to focus more on rehab programs and determination to return. Also, the informational support provided by doctors and trainers about the importance of rehab appeared to lower the ambiguity experienced about the athlete's injury type and recovery diagnosis—allowing them to clearly focus on sticking to a solid recovery program. Evidence from these interviews reports that clear communication channels with high informational and emotional support reduced stress and uncertainty felt by athletes.

Ambivalence

Ambivalence occurs when an object or situation is being contradictorily evaluated. Often, mixed feelings develop when positive and negative aspects are identified. Seven of the athletes interviewed experienced high ambivalence, five a moderate amount of ambivalence and the remaining ten claimed to have a low

amount. For the athletes who had high feelings of ambivalence, they were present for several discussions concerning the positive and negative effects that a surgery may have. The most dominant form of ambivalence experienced by athletes was the mixed feelings pertaining to their injury before, and then once diagnosed.

Mixed feelings usually began at the onset of athletes' pain. Even though several athletes knew that they were hurt and that competing was not in their best interest, every athlete who was still mobile continued to practice anyway. They reported being torn between two emotions: 1.) either they could practice and continue to compete, but risk doing permanent damage to their bodies, or 2.) they could go to a doctor and not be allowed to compete, but would have the chance to heal without jeopardizing their athletic future. The main feeling portrayed at this point was, "How can my sport, something that is my life and my passion, cause something so awful to happen to me?"

One athlete expressed her feelings of ambivalence well when he exclaimed,

When I was diagnosed, I was so upset, but also kind of relieved because it was justifying why I had been performing so bad...I mean, I was throwing better in high school than I am now. To know that something was medically wrong, but could probably be fixed was comforting.

This athlete analyzed the good and bad of her injury—the bad being that she was sidelined for an extended amount of time and the good that she knew what was wrong with her and could get on the right track to recovery.

A rowing athlete experienced similar emotions after she found out how bad her injury was. She was upset that she could not practice with her team but, at the same time, was glad because she knew what she had to do to recover.

A final example of this type of orientation was experienced by a football player after he found out that he needed surgery due to a muscle tear. He said, "At first I wasn't happy about it. I was mad and in shock to a point. But, then I had to take a step back and look at things from a bigger picture. I think I did the mature thing—I knew I had to stop playing." This football player, like other athletes who had never been hurt before, found that it was harder to look at their injury in a wider scope. Facing the reality that something healthy, like physical activity, had the potential to be harmful was difficult for them to grasp.

Upon examining the positive and negative effects of the diagnosis received, athletes weighed the factors on each side, ultimately deciding which side was more important. At first, athletes focused on the negative aspects of their injury. Negative feelings included the frustration and stress of not being able to compete and the loss of their athletic stamina. However, they eventually adapted to their injury and concentrated on the positive aspect of having a recovery plan to follow and the possibility of returning even healthier than before.

While talking with athletes, a pattern of informational support surfaced as desirable by athletes. More informational support showed to help limit the amount of ambivalence formed by athletes after their diagnosis. Right after an injury was confirmed, athletes claimed to appreciate a step-by-step process of what they

could to do recover most quickly and maintain their current fitness level. For example, on volleyball player said,

The best thing my doctor did for me to ease my stress at the onset of injury was setting up a timetable for me to follow week-by-week in addition to giving me progression tests. It's good to have something to look at because it proves that there is a light at the end of the tunnel, so to speak, and a hope for better things to come.

By communicating that there was no doubt about the volleyball player's recovery and future career, some of the negative feelings concerning her injury dissipated. After negative feelings vanished from the athletes' conscious, it allowed athletes to focus on the recovery process—as illustrated by the above quote.

In addition, a form of apprehensive ambivalence surfaced while conducting the interviews. Six athletes asserted that they stuck to their rehab program the entire recovery period, but once it was time to start practicing again, some reluctance occurred. These athletes expressed fear regarding whether or not they were returning to competition too quickly and if there was a possibility of re-injury. They claimed being unsure of playing because they did not want to take a chance of getting injured again. The nervousness regarding the concept of re-injury and additional pain, stress, and rehab, ignited a high ambivalence orientation for athletes. These athletes ultimately had to decide what was more important—their sport or guaranteed health. While these athletes claimed that

their sport was their life, there was still apprehension regarding the risk of hurting themselves worse the next time.

During this apprehensive period, coaches often made the situation worse by undermining the player's health concerns. One football player said, "My coach was pissed, he thought I didn't want to play because it's too much time and rehab, but really I was just scared." At this point, athletes craved attention from their coaches that would challenge them to evaluate their attitudes, values, and feelings about their ability to play healthy—also known as emotional challenge. Athletes wanted reassurance that they had performed all of the steps necessary in order to return one hundred percent. Extra attention appeared to be the key in minimizing mixed feelings regarding this particular situation, which is an important discovery considering all injured athletes come to this stage in their career when they must return to competition.

Impossibility

Impossibility, as a problematic orientation, emerges when the likelihood of some desire or goal occurring is unattainable. Impossibility emerged as soon as athletes began having pain. Seven of the athletes described undergoing severe denial and impossibility when dealing with their injuries and four reported having moderate feelings of impossibility. The rest of the athletes felt they were in denial only for a short amount of time until they accepted their injuries as a fact. In most athletes' situations, it was difficult for them to face the fact that they had a sidelining injury. Most athletes felt that nothing serious could be happening to them, that they were not hurt, and if they kept playing, the pain would go away.

Every athlete interviewed except two said that they practiced through the pain for a certain amount of time, believing that they did not have a serious injury and only a little bit of discomfort. Several athletes even practiced with pain until they could hardly move or walk back to their dorm room. Three of the athletes played a whole season with their injury until they got too tired of dealing with it and being drained on a constant basis from the pain. Some athletes called it procrastination while others said they were in complete denial—but either way, they had difficulty accepting the idea of not competing for an extended amount of time. One athlete said,

I practiced for a couple of weeks with the pain and then had to stop because I could hardly move...I couldn't even walk back to my room...how I let it get that bad...I don't know. I just kept telling myself that if I worked through the pain it would go away on its own.

The most shocking thing heard from an athlete came from a volleyball player who said that she had been playing with pain for three years (since her junior year in high school). Once she got to college, the pain exploded, but she kept playing until she had to limit almost every movement she performed at practice.

All of these athletes experienced impossibility in some form. It was hard for athletes to confront the impossibility of injury because it meant that they were certain competition was over for a long time. Many athletes struggled to accept whether or not they were really injured, which resulted in practicing with discomfort.

For all athletes who experienced problematic integration in the form of impossibility, it took the support of a network to step in and say something. Teammates, in most situations, noticed their teammates limiting movement during practice or walking with difficulty. A basketball player said, "I kept practicing with the pain. I would have kept going except my roommate (teammate) told my coach once I got two weeks into my injury. They made me stop playing." The type of support initiated by these teammates is termed reality confirmation, which is when the athlete is forced, by a supporter, to see things in a healthy perspective. The supporter functions as someone who keeps things in focus for the injured athlete.

An additional type of support that diminished impossibility was the reiteration that the athlete made a smart choice by stopping physical activity. One athlete even said that the ideal type of support she wanted was reiteration from her trainers and coach that if she would have kept training, her injury would have gotten worse and would be harder to recover from later. To hear the words, "You made the right choice," would have been comforting for any athlete to hear.

In addition, it is important for doctors to communicate how serious an athlete's injury actually is. The interviews made apparent that when athletes thought their injury was minor, they did not take their rehab process seriously. However, as soon as the athletes found out how serious their injury actually was, they immediately committed to a recovery program. Accurately assessing the injury may not only help the athlete understand the certainty of the injury, but

may also help apply the frustration toward recovering more quickly with the help of a rehab program.

Evaluating Orientations

A majority of the athletes interviewed experienced Babrow's third phase of problematic integration, which is where integrative dilemmas form within the individual. During this process, the initial problematic orientation is transformed in some shape of form, or altered into another form of orientation (Babrow, 1995). Several reasons cause this transformation to occur, the main one being that other dilemmas, not noticed at first, take on a new and more important meaning, causing new orientations to form.

This transformation often occurs as individual perception of a situation can quickly change. For example, one athlete began her injury as an orientation to impossibility. She kept training through her pain until her foot completely broke. She continued training, ignoring the idea that she may be seriously hurt. After her injury was diagnosed, however, the feeling of impossibility shifted to being uncertain when people gave different estimates about her recovery time. A former teammate said that it (her foot) would take a long time to heal, while doctors estimated a shorter recovery period. The high feelings of uncertainty also caused this athlete to display signs of ambivalence, forced to evaluate countless different diagnoses. Eventually, picking the quickest diagnosis, this athlete instantly began a wishful thinking mechanism in the form of divergence. She reported getting her hopes up, and then when she made it to six weeks and

could still not walk, she did not know what or who to believe, increasing her lack of knowledge and the divergence she experienced.

Another common situation observed in the shifting of orientations is when an athlete experienced divergence at the onset of his or her injury. Most of the athletes went into his or her diagnostic evaluation thinking that the injury is going to be a minor problem. However, whenever a doctor indicated to an athlete that he or she had a serious problem, athletes shifted from wishful thinking or an optimistic bias to having extreme uncertainty about future careers as athletes, or having different perceptions about the injury itself, which sparked mixed feelings, known as ambivalence.

Similarly, as orientations change, so does the athlete's focus. At the beginning of an injury, when athletes were trying to obtain a diagnosis, they usually experienced the stress of not being able to practice or compete. However, as orientations shifted to uncertainty, main concerns of athletes were whether they would lose contact with their teammates, what their coaches may think, and if the injury was completely fixable.

APPENDIX D

Injured Athlete Survey

1. Welcome

You are being asked to participate in a research study designed to help lower the amount of time high school and college athletes spend injured and reduce the number of injuries that occur among those athletes. The goal of this study is to help understand the types of stress that occur during injury and the factors that trigger increased stress levels. In addition, this study is designed to determine the types of support that individual athletes desire from their support networks in hopes of better providing desired support to athletes in the future.

This study is being conducted by the researcher as a part of my Master's degree program at the University of Dayton in Ohio.

You will be asked to complete a survey consisting of 6 different sections. The survey is designed to assess how much stress the athlete experienced before and/or during his or her injury, what type(s) of support was provided, and what type(s) of support was desired.

Please apply the questions to either your current injury, or most recent injury. The survey will take approximately 5-10 minutes to complete.

The survey will be completely anonymous and the researcher will not be able to identify you, or your school. Your survey will be coded by number. The survey answers will be recorded into a computer database with all of the other participant's responses.

If you would like to receive the results of the study, please contact the Investigator at heasemi3@notes.udayton.edu after May 7, 2008. Thank you for your help.

1. I have read and understand this consent form, and I volunteer to participate in this research study. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable federal, state, or local laws.

- ☐ Yes, I agree and would like to complete the survey
- ☐ No, I would not like to be a part of this study

2. Athletic History

1. Are you on any type of athletic scholarship?

- ☐ Full scholarship ☐ Partial scholarship ☐ No scholarship

2. At the time of your most recent or current injury, what was your position on the team? (Check all that apply)

- ☐ I was the best athlete on the team ☐ I was on the JV team
☐ I was a starter on the varsity team ☐ I did not contribute a lot to my team's competitions
☐ I was not a starter but on the varsity team

3. How long were you unable to compete in your sport for?

- ☐ 1-7 days (Minor) ☐ 8-20 days (Moderate) ☐ 21+ days (Severe)

4. I was in a high level of pain before I consulted a higher source (coach, doctor, trainer, etc)

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

5. I tried to hide my injury from my coaches and trainers

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

6. I felt a certain amount of pressure from my coaches to participate while I was hurt

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

7. Before my injury my stress level was approximately:

- ☐ 1) No stress at all ☐ 2 ☐ 3 ☐ 4 ☐ 5) Extremely High stress

8. During my injury my stress level was approximately:

- ☐ 1) No stress at all ☐ 2 ☐ 3 ☐ 4 ☐ 5) Extremely High stress

9. Before my injury, I felt satisfied with the amount of support I received from my coach

- ☐ 1) Very satisfied ☐ 2 ☐ 3 ☐ 4 ☐ 5) Very dissatisfied

10. During my injury, I felt satisfied with the amount of individual support I received from my coach

- ☐ 1) Very satisfied ☐ 2 ☐ 3 ☐ 4 ☐ 5) Very dissatisfied

11. I felt physically cared for during my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

12. I felt emotionally cared for during my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

13. My coach communicated with me frequently throughout my recovery

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

14. The support I received from my coach(es) helped lower my stress levels during my injury

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

15. The support I received from my coach(es) helped me recover quicker

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

3. Divergence

1. I was told different time frames for how long I would be unable to practice/compete from individuals such as my coach, doctor, teammate, etc.

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

2. Hearing conflicting messages about how long my injury would take to heal added stress to my rehabilitation program

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

3. Hearing conflicting messages about how long my injury would take to heal added stress to my athletic identity

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

4. Hearing conflicting messages about how long I would be injured for hindered (or will hinder) my ability to recover quickly

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

5. Rate your stress level in response to hearing varying messages throughout your injury

☐ 1) Not a lot of
stress

☐ 2

☐ 3

☐ 4

☐ 5) A lot of stress

4. Ambiguity

1. Upon injury, I still thought I could participate in the upcoming athletic season

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

2. Upon injury, my future as an athlete was unclear

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

3. Upon injury, what was your personal perception of the injury situation?

- ☐ 1) Severe ☐ 2 ☐ 3 ☐ 4 ☐ 5) Not Severe

4. What was the actual status of your injury situation after diagnosis?

- ☐ 1) Severe ☐ 2 ☐ 3 ☐ 4 ☐ 5) Not Severe

5. I felt my injury diagnosis was clearly explained

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

6. I felt my injury diagnosis was accurate

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

7. I was clearly told what rehabilitation efforts would help me recover the quickest

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

8. The recovery instructions I received helped me recover quicker

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

9. I felt that I needed more guidance in what rehabilitation program to follow

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

10. My coach emphasized the importance of the rehabilitation program

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

11. The emphasis my coach put on my rehab increased my motivation to adhere to the program

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

12. I believe that if my coach more heavily emphasized a rehab program it would have increased my motivation to follow a recovery program

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly
Agree

☐ NA) my coach
strongly
emphasized rehab

13. The more knowledge I have about my injury, the more control I feel I have over my injury

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

14. The more communication I have with my support networks, the less confused I feel about my injury

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

15. The more I learned about my injury, the less stress I felt

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

16. The more I learned about my injury, the more motivated I was to recover

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

17. The more I learned about my injury, the easier it was for me to recover

☐ 1) Strongly
Disagree

☐ 2

☐ 3

☐ 4

☐ 5) Strongly Agree

5. Ambivalence

1. Individuals in my support network gave me varying messages related to my injury

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree

2. Receiving different messages from people made me feel uncertain about my injury status

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree

3. Receiving different messages from people increased the stress levels I experienced in regards to my injury

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree

4. I picked one person's advice and adhered to it over everyone else's

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree

5. Hearing the same messages from different members in my support network would have increased my motivation to recover quicker

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree
 ☐ NA) I did hear the same messages from everyone I communicated with regarding my injury

6. Hearing the same messages from different members in my support network would have made it easier to recover

- ☐ 1) Strongly Disagree
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5) Strongly Agree
 ☐ NA) I did hear the same messages from individuals in my support network

6. Impossibility

1. I continued practicing and/or competing even though I knew I was hurt

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

2. My coach pressured me to practice and/or compete even after my injury was diagnosed

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

3. I had trouble accepting that I was really injured

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

4. I was angry when I was unable to participate in my sport

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

5. I received many positive messages during my injury

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

6. I received many negative messages during my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

7. Receiving more positive messages from members of my support network would increase my desire to return to my sport

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

8. Receiving more communication in general during my injury from members of my support network would increase my motivation to recover

- ☐ 1) Strongly Disagree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Agree

7. Media use

1. I consulted the media for more information about my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

2. Information I gathered from the media helped lower my stress levels regarding uncertainties I felt about my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

3. I considered the media as a form of support during my injury

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

4. I believed the media regarding my injury diagnosis over what my doctor and athletic trainer said

- ☐ 1) Strongly Agree ☐ 2 ☐ 3 ☐ 4 ☐ 5) Strongly Disagree

5. What forms of media did you consult for information about your injury?

- ☐ Internet ☐ Television ☐ Radio ☐ Newspapers ☐ Magazines ☐ Films

APPENDIX E

September 2, 2007

Hello,

My name is Emily Haas and I am a graduate student at the University of Dayton in Ohio. I am working on my Masters in Health Communication. I am currently gathering data for my Master's thesis. My thesis is addressing the issue of athletic injury, particularly in high school and college settings. Often, when injury occurs, athletes develop and receive several different kinds of treatment and communication from their support networks. This inconsistency can result in confusion, low motivation, and high stress. I would like to find out if optimal social support from preferred networks can aid in significantly lowering these negative side effects of injury, or injury altogether.

I developed a survey, addressing the side effects of injury and desired social support pertaining to athletes. I would appreciate if you would forward this link to my survey to your athletes and/or injured athletes. Any athlete who is currently or was recently injured will be able to take the survey. I feel that your athletic team is a great resource for me to gather useful data that would help me complete my thesis research.

I believe that this is a study that can benefit many athletes in the future. Being a former college athlete myself and under-going a major injury, I realize the mental and physical setbacks that occur. I would like to help prevent some injuries and/or side effects that arise as a result of injuries. Discovering the social support methods to which individual athletes respond could aid in injury prevention.

I would really appreciate your help with my study. I would also value your opinion in what other resources you feel would be useful on which I might post my survey and obtain data for my study.

Thank you for your time.

Sincerely,

Emily Haas
University of Dayton
Graduate Assistant

VITA

Emily Joy Haas

Graduate Assistant—Communication—University of Dayton

Education

University of Dayton
M.A. in Communication
Concentration: Health Communication

Graduated: May 2008

- Thesis: "How Long Will I Be Out? Overcoming Athletic Injury Through Desired Social Support: A Closer Look at Problematic Orientations"
- Advisor: Dr. Teresa Thompson
- Committee: Dr. James Robinson and Dr. Peter Titlebaum
- Membership: PRSA (2007-present)

University of Dayton
B.A. in Communication

Graduated: May 2007

- Concentration: Public Relations and Marketing
- Honors: Maureen M. Pater Distinction Award in Public Relations (2007) Coach's Award, Cross-country (2006), Magna Cum Laud
- Activities: PRSSA (Public Relations Student Society of America) (2003-2007), PRSSA vice president (2004-2005), PRSSA president (2005-2006), Varsity cross-country and track athlete (2003-2007)
- Membership: National Honor Society Golden Key (2005-present), Omicron Delta Kappa National Leadership Honor Society, (2006-present)

Teaching Experience

Graduate Assistant University of Dayton Aug. 2007-May 2008

- Responsible for the construction and implementation of lesson plans for introductory communication modules
- Group Decision Making (CMM110, lecture)
- Informative Public Speaking (CMM111, lecture)
- Interviewing (CMM113, lecture)

Invited Presentations

Haas, E. (April, 2006). "Social Support during an Athletic Injury."
Panelist for University of Dayton Stander Symposium

Haas, E. (April, 2007). "Neuroses in Organizations: Applying Psychodynamics."
Panelist for University of Dayton Stander Symposium

Haas, E. (October 2007). "How to Focus your Research Goals."
Speech presented to COM501 students, University of Dayton

Haas, E. (April 2008). "The Differences between Undergraduate and Graduate Studies and How to Adapt to the Changes."
Speech presented to Founders Hall students, University of Dayton

Haas, E. (April 2008). "How Long Will I Be Out? Overcoming Athletic Injury through Desired Social Support: A Closer Look at Problematic Orientations"
Panelist for University of Dayton Stander Symposium

Research Experience

Research Assistant: Kettering Foundation Jan. 2008-March 2008
Conducted with Dr. Edith Manesovitch

- Helped gather information on current research containing information on political deliberation in face-to-face and online interactions
- Assisted in the research and data collection process for sample
- Coded all data for cross-cutting and deliberation with 88 percent accuracy

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