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Athletes' retrospectives on serious sports injuries.

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Athletes' Retrospectives On Serious Sports Injuries

by

Nancy C. Gyurcsik

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Abstract

This study investigated qualitatively the serious sports injury experiences of athletes. Participants were fifteen university, provincial, national, or local all-star level athletes between the ages of twenty and twenty nine. All had been injured between two and eight years prior to being interviewed. In-depth interviews with each participant focused on personal history, injury history and experience, health care and social support, injury aftermath, and a follow-up section which included a validity check. Data from the interviews were organized into increasingly broader ordered themes that ultimately summarized the fundamental features of the injury experience.

The second order themes derived from the first order themes and, in some cases, only the first order themes arising from the raw data analysis were: injury diagnosis, physical fears and adaptations, the role of health care professionals, affective domain responses, cognitive domain responses, shared social reality, empathetic support, altered self-concept, threats to sport goals, and feelings of a loss of personal control. These themes were ultimately organized into a model of the injury experience that identified an increase over time of internal attributions that reflected a positive self-concept.

Early in the injury experience, athletes perceived themselves as being at fault for the injury and its negative

consequences and were dependent upon others, especially health care professionals, for the positive aspects of their recovery. Internal attributions were couched in negative terms while external attributions were phrased in positive terms. As time went on, athletes came to take more responsibility for their own recovery and developed a more positive attitude toward their bodies, their injuries, and their role in rehabilitation. At some point, the injured athletes reversed the pattern that existed early in rehabilitation and began to develop a more positive self-concept and a more internally directed attitude toward recovery.

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upright the many times that I somehow managed to fall backwards while sitting in front of my computer writing this paper. Finally, a huge thanks to my mother, who has been a constant source of support in all of my undertakings. I am very fortunate to have such a beautiful person as a mother and friend.

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Chapter I

Review Of Literature

Introduction

As the potential benefits of being physically fit influence health studies and health promotion, more North Americans are becoming athletes at some level. However, any involvement in athletics is accompanied by acceptance on the athlete's part of the inherent risk of injury. It has been found that involvement in sports increases a person's exposure to the risks of chronic pain, injury, and even permanent disability (Nixon II, 1992).

Although an athlete may accept the risk of becoming injured during her/his practice or competition, various psychological and physical factors interact within the athlete and various circumstances occur around the athlete when injury occurs. Indeed, a physical injury may lead to long-term pain and rehabilitation and/or negative psychological effects due to a loss of participation and its impact on success (Heil, 1993). In order to fully understand the entire experience that transpires when an athlete is injured, one must first understand the basic definitions of pain, chronicity, and injury.

Pain

With most types of tissue damage, a pain sensation is felt by the person. In the beginnings of pain research, scientists searched for a purely physiological explanation for pain. However, as early as 1952, some researchers acknowledged the importance of emotional factors in the pain experience (Elton, Stanley, & Burrows, 1983). As pain research progressed, it was determined that four classes of variables interact with one another which results in the pain experience. These four variables are concepts of pain, neurophysiological and biochemistry variables, personality variables, and psychosocial variables (Elton et al., 1983). Thus, pain is a physiological and emotional construct that must be defined with respect to these terms.

Although there is no universally accepted definition of pain, current definitions include objective, physiological aspects and subjective, emotional aspects (Elton et al., 1983; Hall & Davies, 1991; Meyers, Bourgeois, Stewart, & LeUnes, 1992). For example, the International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual...tissue damage, or described in terms of such damage" (Paice, 1991, p. 843).

The objective neurophysiological component of the pain experience is referred to as nociception which involves the stimulation of specific pain fibres, namely A-delta and C fibres. Nociception begins with tissue damage resulting from

mechanical, thermal, and/or chemical stimulation. This stimulation results in the transmission of noxious signals along A-delta and C pain fibres. The impulses along the fibres travel from the body's extremities to the spinal cord at which point the fibres synapse with neurons in the dorsal horn of the gray matter of the spinal cord. These neurons then travel to the brain which interprets the physical sensation as being painful.

As well, branches of these same fibres terminate in various parts of the brain, such as the somatosensory cortex, where they interact with various psychological factors. These interactions contribute to the person's psychological reaction to the sensation of pain that was registered by the brain depending on whether the person has positive or negative stored experiences with the same or similar situations (Carter & Isear, 1993; Turk & Rudy, 1992; Wallace, 1992). Some of these psychological factors include memories of similar past pain experiences, previous involvement in rehabilitation programmes, and previous reactions to similar painful stimuli. In most cases, when a person feels pain during an activity, she/he chooses to cease this activity due to her/his psychological reaction to the physical pain sensation (Hall & Davies, 1991).

Thus, pain begins with the transmission of a stimulus along nociceptive fibres to the brain. But, in the end, the total pain experience "is a subjective experience, with a

large emotional component, and so is dependent upon the circumstances of the person affected" (Hall & Davies, 1991, p. 779).

Chronicity

Researchers have sought to define chronic pain with reference to an exact time period post injury. The most acceptable definition of chronic pain has been that which was present in a person six months post-onset (Johnson, as cited in Heil, 1993; Philips & Grant, 1991). However, other accepted definitions have proposed that chronic pain exists when the person still feels pain after the point of predicted healing (Philips & Grant, 1991). Of course, the predicted healing time frame must be based on a sound medical diagnosis and rehabilitation programme as well as a complete understanding of the injured person's psychological reaction to and coping mechanisms with the injury.

Basically, chronic pain "is a complex, subjective phenomenon that is uniquely experienced by each individual, then knowledge about idiosyncratic beliefs, appraisals, expectancies, and coping repertoires become critical for optimal treatment planning and for accurately evaluating treatment outcomes" (Turk & Rudy, 1992, p. 103). It is well documented that chronic pain syndrome begins with an injury that elicits pain through nociceptive pathways. However, as pain persists, psychological, somatic, and life situation

factors interact with one another and may increase and/or maintain pain levels in the individual (Heil, 1993; Turk & Rudy, 1992).

According to Heil (1993), there are specific variables within each of these three factors that may be present in an individual. Psychological variables include anxiety, depression, somatization, poor self-esteem, social withdrawal, sleep disturbance, and sexual dysfunction. The somatic variables are injury, surgery/hospitalization, substance dependence, musculoskeletal deficiency, and deconditioning. The variables that Heil (1993) suggested fit into the life situation category are work disability, financial strain, family/marital strife, social deficits, and recreational deficits. Thus, it is evident the individual suffers from the chronic pain not just in physical ways, but in psychological ways as well. As a result, the severity of the chronic pain experience is determined to a greater extent by the effects of the pain on a person's behaviour as opposed to the intensity of the physical pain sensations (Heil, 1993).

Injury and the Athlete

An injury occurs when there is chemical, thermal, and/or mechanical overstimulation of tissues. This usually results in a nociceptive message travelling to the brain where it is interpreted as being painful. Subjective emotional, psychological, somatic and/or life situation factors also play

roles in the extent that the person feels the pain and how she/he reacts to the injury in the short-term and/or long-term. Although all of these constructs act to influence each athlete's experience of an injury, there is no clear formula to determine how a specific athlete will react to an injury. As a result, it is important to understand the whole athlete and how the injury has affected her/his whole being; one must treat the mind and the body as interdependent, each influencing the other.

Research has analyzed the disrupting impact that the stresses of an injury had on people's overall well-being (McDonald & Hardy, 1990; Nideffer, 1983; Rotella, 1982; Smith, Scott, O'Fallon, & Young, 1993). Based on this literature, Heil (1993) stated that injury stresses have the potential to affect one of the four general categories of physical well-being, emotional well-being, social well-being, and self-concept. Based on these conclusions as well as a thorough review of current injury research, a similar model was developed which incorporates and summarizes a great deal of the existing injury literature. Many of the variables which have been found to influence an injury experience can be placed into the four categories, which are very similar to Heil's (1993), of physical well-being and the rehabilitation experience, emotional well-being, social support, and self-concept. The variables that constitute each category have been found to potentially affect the specific type of well-

being, social support, or self-concept.

Physical well-being and the rehabilitation experience is affected by injury pain and tolerance levels, physical injury including temporary physical restriction and permanent physical changes, and the total rehabilitation programme including such aspects as physical progress and injury education. Emotional well-being is affected by psychological trauma, feelings of fear, guilt, and loss of independence, emotional acceptance of injury, and cognitive responses based on emotional reactions. Feelings of social support are affected by a loss of important social roles, and separation from coaches, teammates, family, and friends. Self-concept may be altered due to stresses brought on by feelings of a loss of personal control, dealing with altered self-image, threats to life goals and values, feelings of a loss of identity or importance, and personalization of the injury.

Although each of the four categories is defined by its associated variables, each type of well-being, social support and/or the self-concept may be affected by variables in other categories. For example, an athlete's self-concept may be altered if she/he does not feel any type of social support. Thus, the variables within each category have the potential to influence to a certain extent all of the other three categories depending on the individual athlete.

In the end, this influence on some or all of these categories affects a person's overall health. In the past,

health has been defined on a purely physical level as the absence of disease (Insel & Roth, 1991). Presently, health is defined with respect to the overall wholeness or wellness of the individual (Insel & Roth, 1991; Moyers, 1993). Wellness is viewed as optimal health and vitality "encompassing physical, emotional, intellectual, spiritual, and environmental well-being" (Insel & Roth, 1991, p. 4). Thus, occurrences or stresses may take place around or within the individual which have the ability to affect her/his specific type of well-being either positively or negatively. Then, these specific changes subsequently impact her/his overall health.

Physical Well-Being and the Rehabilitation Experience

1) Pain Tolerance and Injury Classification

Many athletes and nonathletes may sustain injuries that appear on a physical level to be very similar in nature. However, the amount of pain that each person feels after sustaining an injury may differ depending on such factors as the gender and athletic involvement of each person. For example, the differences in the levels of pain tolerance between genders may be due to societal influences in which men are taught to view pain as a part of their masculinity whereas women are taught to avoid pain (Hall & Davies, 1991). In contrast to these gender differences, comparisons of athletes' to nonathletes' pain tolerance levels found that female

athletes had higher levels of pain tolerance than male nonathletes. As well, the male nonathletes had lower pain tolerance levels than male athletes, but higher levels than female nonathletes (Hall & Davies, 1991). This is due to the fact that athletes are more exposed to injury and are thus more experienced in coping with the injury (Hall & Davies, 1991; Heil, 1993).

According to Heil (1993) five types of injury categories exist when dealing with an athletic population:

i) mild - an individual's injury requires treatment, but her/his training is not interrupted.

ii) moderate - a more severe injury that interferes with training and participation in the athletic event.

iii) major - this type of injury requires a long time period of no participation whatsoever, and often requires surgery or hospitalization.

iv) sport disabling - an injury which prevents the athlete from attaining pre-injury levels of competitive performance due to severity or timing.

v) catastrophic - permanent functional disability caused by the injury.

For the purposes of this study, a hybrid type, the serious sports injury, was defined as a composite of the major injury and sport disabling injury definitions of Heil (1993). A serious sports injury is one which causes the athlete to have a long period of no athletic participation whatsoever and

may or may not have prevented the athlete from attaining higher levels of competitive performance. In addition, the injury must have affected the athlete for a minimum of three months with respect to feelings of physical pain which hampered performance. This time frame may not seem that long with respect to an athlete's career, however, at certain competitive levels, such as University athletics, three months encompasses the majority, if not all, of the athlete's season.

2) Rehabilitation

After an athlete has been injured, regardless of the injury severity, the subsequent steps involve the medical assessment of the injury and the rehabilitation of the athlete. It is important that the athlete receive the correct medical diagnosis of her/his injury so that the therapist will know what steps must be followed in the physical rehabilitation of the athlete. Furthermore, any type of injury involves psychological factors in addition to the physical sensations of pain felt by the athlete. It has been suggested that one must assess the personal meaning of the injury to the athlete which leads to some degree of psychological cost (Heil, 1993; Henderson & Carroll, 1993). This type of psychological assessment involves "attention to a broad array of physical, psychological, and social factors related to the athlete's unique needs and to the role that

sport plays in his or her life" (Heil, 1993, p. 73). It was suggested by Steadman (1982) that a rehabilitation programme be comprised of the three parts of psychological rehabilitation, general physiological rehabilitation, including aerobic conditioning, overall strength, and flexibility, and the specific rehabilitation of the injured area.

For the purposes of this study, it is important to note that the psychological aspect of rehabilitation is not a separate entity from the other two aspects of the rehabilitation programme proposed by Steadman (1982). Rather, all three rehabilitation aspects interact with and influence one another which determines the overall effectiveness of the rehabilitation programme. Therefore, one must understand not only the physical aspect of an injury, but also the potential psychological factors that may come into play when an athlete first becomes injured and then progresses through a rehabilitation programme. At this time, there are no time frames on how long each athlete will experience the psychological aspects to an injury or even if they will experience the same aspects at all.

At the same time, it has been found that an athlete not only faces unique challenges in her/his injury experience, but she/he may also possess certain characteristics which result in her/him being more adept at coping with the injury (Heil, 1993; Heil & Fine, 1993; Henderson & Carroll, 1993). Some

advantageous characteristics of the athlete include a good pain tolerance, goal orientation, a willingness to perform physical training, and a high motivation to return to optimal function. However, the athlete also faces increased negative psychological challenges when dealing with an injury. She/he may feel a greater sense of loss and a greater threat to her/his self-esteem due to the great amount of time, energy, and emotion that she/he invests into athletics (Heil, 1993; Henderson & Carroll, 1993). As well, an athlete sometimes has more difficult times accepting that her/his recovery period may be longer than a sedentary person's recovery from the same injury. This is due to the fact that the athlete must return to a higher level of functioning in order to successfully compete. Taking into account all of these factors, rehabilitation programmes are most effective when the positive factors outweigh the negative factors (Heil, 1993).

3) Injury Education

After an athlete has been injured, various members of the health care professional team, such as doctors, therapists, nurses, and psychologists, should discuss the cause and the physical consequences with the athlete in simple, understandable terms (Heil, 1993). It is important that a member, such as the therapist, educate the athlete as she/he progresses through rehabilitation because most injured athletes spend more time with their therapists than with their

doctors. As well, the athlete should be educated about the healing process of the injury including how rehabilitation methods will aid in this healing (Heil & Fine, 1993; Wiese, Weiss, & Yukelson, 1991). As well, it is very important that the athlete receive all of this education about her/his injury so that she/he will then be able to give full effort in the rehabilitation. According to Heil (1993), it is very difficult for an athlete to give a maximal effort to something that is not understood.

In addition, the educated athlete may show decreased, undesirable psychological reactions to the injury. When an athlete understands all aspects of the injury and the rehabilitation, she/he may subsequently feel greater control and thus reduce any false fears and/or negative psychological reactions that may have arisen when she/he was first injured. This is in contrast to athletes who overestimate the seriousness of an injury and are not corrected by proper education. These athletes report feelings of more pain, anxiety, anger, loneliness, apathy, and inadequacy according to Crossman & Jamieson (1985).

Emotional Well-Being

1) Emotional/Psychological Factors Involved in Initial Injury

When an athlete first becomes injured, it is important to diagnose and treat the physical aspects of the injury, such as edema, muscle fibre damage, and a decreased range of motion.

At the same time, the psychological state of the athlete should be considered. The overall impact of the injury on the athlete at the moment of its occurrence determines the degree of emotional challenge the athlete will face during her/his rehabilitation. In fact, athletes with similar injuries have been found to recover at different rates depending on the athletes' personal responses to their injuries (Ievleva, as cited in Heil, 1993; Ievleva & Orlick, 1991).

Important factors that the psychological assessment must take into account are the severity of the injury and the athlete's psychological adjustment to the injury (Heil, 1993; Henderson & Carroll, 1993). The injury severity affects pain levels, amount of time taken off from the sport, and the rigors of rehabilitation. As well, Heil (1993) stated that psychological adjustment "determines the athlete's response to injury and affects coping ability: Will he or she respond with feelings of hopelessness and depression or with optimism and a willingness to strive for excellence during rehabilitation?" (pp. 113-114).

Another factor that should be of concern is the athlete's distress level and how well the athlete has implemented her/his coping resources (Heil, 1993). Distress is "a summative measure of emotion and pain, spoken and displayed" (Heil, 1993, p. 90). Generally, the higher the level of emotional distress relative to the severity of the injury, the greater the cause for concern (Heil, 1993). If an injury has

had a significant psychological impact on the athlete, Lipowski's study (as cited in Heil, 1993) found that she/he may exhibit some or all of four types of behaviours at the time of injury or shortly thereafter.

Firstly, the athlete may exhibit extreme fear, agitation, anxiety, or hopelessness. She/he may also have a sense of depersonalization in which she/he feels that the injury has not happened to her/him or that injuries only happen to others. Thirdly, the athlete may fail to remember all of the circumstances of the injury. Finally, retrograde or posttraumatic amnesia regarding the injury events may be evident with the athlete.

In addition, the degree of emotion and pain may vary among different athletes with the same injury because each athlete attaches personal meanings to the injury (Ievleva, as cited in Heil, 1993; Ievleva & Orlick, 1991). These researchers found that an athlete can potentially attach a wide variety of personal meanings to an injury. For example, the athlete may see the injury as a challenge to overcome or as an enemy that threatens to destroy. Others may view an injury as evidence of inherent weakness, punishment of past transgressions, or relief from demands and responsibilities. Finally, an injury may be viewed as an irreparable loss or as a tool for manipulating one's environment to meet personal or financial needs.

Four other factors were identified that have the

potential to affect an athlete's initial emotional/ psychological well-being. The first of these is the injury site in which a greater psychological impact is seen with those injuries that occur to a part of the body that is highly prized and/or for which special fear exists (Eldridge, 1983; Ford, 1983; Grunert, Devine, Matloub, Sanger, & Yousif, as cited in Heil, 1993). As well, Ford (1983) found that injuries which cause a loss of physical attractiveness have the greatest psychological impact on women, whereas those injuries which cause a loss of functional ability have the greatest psychological impact on men.

Second, pain that immediately follows an athletic injury is not only indicative of the severity of the tissue damage, but is also related to the athlete's feelings of anxiety and predictions of how the injury may impact her/his future performances (Loeser, as cited in Heil, 1993). A breakdown of coping mechanisms is displayed when the athlete feels pain that is grossly higher relative to the severity of the injury. The third factor that may impact emotional well-being is the time in an athlete's season or career that an injury occurs. Those injuries that cause an athlete's season to end may result in the athlete having feelings of incompleteness which stay with them into the following season (Loeser, as cited in Heil, 1993). The fourth factor, unexpectedness of the injury, may influence emotional well-being. For example, those athletes who understand and accept the risks that they may

become injured through their participation in athletics have lower distress levels and are more accepting of injuries and their consequences (Braverman, 1977).

As a result of these initial emotional/psychological factors which may impact an injury experience, Griffith (1982) proposed that an athlete may develop certain initial emotional responses to the injury. For example, the athlete may respond to the injury with a great deal of fear of the pain, possible disfigurement, unfamiliar procedures, and how the injury will affect the athlete's life in general. Griffith (1982) recommended that one way to decrease this fear was to provide the athlete with as much information as possible.

Also, many injured athletes feel guilty after becoming injured. This sense of guilt arises mainly from the fact that the athlete feels she/he has let the team down. Regardless of the origins of this guilt, it is recommended that one should not only assure the athlete that she/he is not being blamed for the injury, but also let the athlete express any guilty feelings she/he may be having (Griffith, 1982). Finally, an injury is often accompanied by a feeling of a loss of independence on the part of the athlete. She/he is no longer able to perform in the same ways as before the injury. Thus, Griffith (1982) stressed the importance of allowing the injured athlete to do as much as possible throughout her/his injury experience.

2) Stages of Emotional Acceptance of the Injury

It has been found that an athlete passes through several stages before emotionally accepting an injury. These stages are based on an athlete's personal/emotional reaction to the injury and are related to the stages of grief as first studied by Kubler-Ross in 1969 (Griffith, 1982; Henschen & Shelley, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986). Kubler-Ross (1969) interviewed over 200 terminally ill patients and found they experienced five characteristic reactions to their illnesses. These five reactions, which were termed stages by Kubler-Ross (1969), are denial and isolation, anger, bargaining, depression, and acceptance and resignation. A person need not progress through these stages in a regular sequence and can fluctuate between stages during various times (Kubler-Ross, 1969).

Rotella (1982) initially applied Kubler-Ross' stage theory to athletic injury because an injury can cause the instant end of an athletic career which was preceded by many hours of practice. Oglivie and Howe (1986) and Rotella and Heyman (1986) suggested that when an athlete is initially injured she/he may underplay the severity and believe she/he will be participating again in an unrealistically short time period. However, once the athlete realizes the injury severity, she/he may feel isolated and lonely. It follows that the athlete becomes angry and irritable at others and at herself/himself as she/he progresses through the injury

recovery. This is followed by depression which is characterized by a true sense of loss (Rotella, 1982). This model is accepted by sports psychologists due to its "intuitive appeal...for linking the typical emotional response to injury to the Kubler-Ross model of grief" (Heil, 1993, p. 36). Although these stages of grieving responses were found to exist in many injured athletes, the extent to which they are characteristic of all athletic injuries with respect to types and severities is not known at this time (Heil, 1993; Henderson & Carroll, 1993).

The affective cycle of injury is proposed as an alternative to the stage theory (Heil, 1993). The basic assumption is that "movement through stages is not a one-time linear process but is a cycle that may repeat itself" (Heil, 1993, p. 36). In addition, the stages of this affective cycle are distress, determined coping, and denial.

Distress occurs when there is a disruption of the athlete's emotional equilibrium due to the disorganizing impact of the injury (Heil, 1993). It involves anger, shock, bargaining, anxiety, depression, isolation, guilt, humiliation, preoccupation, and helplessness (Heil, 1993). Denial is characterized by a sense of disbelief that the athlete has injured herself/himself and causes the athlete not to accept the fact that she/he was injured (Heil, 1993). This denial can range from mild to severe and varies across different circumstances. Determined coping occurs when the

athlete accepts, to varying degrees, the severity of the injury. The athlete also accepts the disrupting effect that the injury will have on her/his short-term and long-term goals. During this stage, the athlete uses her/his coping resources in order to aid in the process of recovery (Heil, 1993).

In the affective cycle of injury, the general trend is that distress and denial are at peak levels in the early stages of the injury. Then, as the rehabilitation proceeds, determined coping dominates the athlete's response to the injury. However, the emotional response may shift from denial to distress to determined coping at any time. Heil (1993) stated:

> One element will tend to dominate at a given stage in the rehabilitation process; however, any given element will seldom dominate 24 hr a day. Even during a period primarily characterized by determined coping, denial or distress may resurface for varying periods of time and with varying degrees of impact. (p. 37)

These shifts in emotional responses are due to specific experiences or events that occur during each 24 hour period. For example, a review of the video in which the athlete was injured may lead to a shift in emotion from determined coping to distress.

3) Cognitive Responses to Injury

An athlete's emotional reaction/acceptance of an injury is most often accompanied by cognitive responses (Beck & Emery, 1985; Beck, Rush, Shaw, & Emery, 1979; Turk & Rudy, 1992). The athlete's feelings of emotional distress surrounding her/his injury often result in inaccurate interpretations of the situation due to distortions in thinking which indirectly influences the athlete's emotional well-being (Smith, Aberger, Follick, & Ahern, 1986; Smith, Follick, Ahern, & Adams, 1986). Cognitive distortions are further exaggerated when one attempts to determine the meaning of the injury (Heil, 1993). Four cognitive distortions have been identified in an injury experience which cause the athlete to misinterpret events surrounding the experience (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992).

The first distortion involves the athlete having catastrophizing thoughts in which the severity of the injury is exaggerated. For example the athlete may say 'My career is over' in the face of suffering a serious injury. A second distortion, overgeneralization, occurs when the athlete thinks the injury will impact parts of her/his athletic performance and/or daily activities that are not likely to be affected (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992). For example, this may occur after an athlete has torn a knee ligament and feels that she/he will never be able to walk again.

Selective abstraction is another type of cognitive distortion and involves the athlete focusing on certain parts of the injury experience that have little meaning in relation to the overall injury and recovery (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992). For example, this may occur when the athlete feels she/he will not recover from her/his ankle injury because a teammate had a similar injury and did not recover from it. The final type of cognitive distortion is dichotomous thinking. This means the athlete reduces her/his complex injury experience into an all-or-none category (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992). For example, the athlete believes the pain is either all physical or all in her/his head.

Clearly, it is important when treating an injured athlete to clarify the athlete's "thoughts on injury and an analysis of their accuracy based on objective assessment of the situation" (Heil, 1993, p. 43). Throughout an injury experience, an athlete may have certain emotional responses and cognitive distortions that give rise to negative or positive impacts on her/his emotional well-being. Being aware of those factors that affect the athlete's emotional well-being ensures that the athlete's thoughts and subsequent concerns will be dealt with effectively. Thus, her/his emotional well-being may be more positively affected.

Social Support

When an athlete is injured, her/his feelings of social support and overall well-being may be affected negatively due to such factors as a loss of important social roles and separation from coaches and teammates. Clearly, when an athlete is participating in her/his sport, the athlete has many opportunities for coach and teammate contact, and thus, for social support which positively benefits the athlete's social well-being. However, when an athlete's injury dictates time away from the sport and subsequent participation in a rehabilitation programme, these opportunities diminish and the athlete may feel lonely or separated from the team because the athlete is no longer spending as much time with her/his coaches and teammates (Griffith, 1982; Heil, 1993). As well, an athlete's social support may be further diminished when friends and family do not know what to say to the athlete and, as a result, tend to avoid her/him (Griffith, 1982).

On the other hand, it has been found that an injured athlete's overall well-being is enhanced when the athlete feels she/he has the social support of surrounding people (Hardy & Crace, 1993; Richman, Hardy, Rosenfeld, & Callanan, 1989). It is known that strong feelings of social support function to lower stress and lead to greater self-efficacy, lower anxiety, better interpersonal skills, and more risk-taking behaviours (Hardy & Crace, 1993; Heil, 1993; Nixon II, 1992; Sarason, Sarason, & Pierce, 1990; Shumaker & Brownell,

1984).

In addition, social support has been found to encourage the constructive expression of feelings, provide reassurance in times of doubt, and improve communication and understanding (Hardy & Crace, 1993; Heil, 1993). Socially supported athletes show better compliance with their rehabilitation programmes following their injuries (Duda, Smart, & Tappe, 1989; Fisher, Domm, & Wuest, 1988). It is clear that athletes are the recipients of a great deal of social support through their involvement in sports. The major sources are the coaches, trainers, and fellow athletes (Hardy & Crace, 1993; Heil, 1993; Nixon II, 1992; Wiese & Weiss, 1987). In addition, friends and family offer varying degrees of support depending on the individual athlete (Griffith, 1982; Hardy & Crace, 1993; Heil, 1993).

According to Hardy and Crace (1990), Pines, Aronson, and Kafry (1981), and Rosenfeld, Richman, and Hardy (1989), seven major forms of social support exist. The first form, listening, involves listening to another's concerns and feelings without making any judgments. As well, it involves the emphatic sharing of joys and sorrows. Technical appreciation is the second type of social support and occurs when one who understands the technical aspects to a certain task acknowledges an athlete's good performance. Similarly, technical challenge is the third form of support and occurs when people with technical task understanding encourage the

athlete to meet performance goals.

The fourth type is emotional support which is given by those people who comfort the athlete, show they care for the athlete, and convince the athlete that they are on the athlete's side. Emotional challenge is the fifth form of social support and results when people challenge the athlete to reevaluate her/his attitudes, values, and feelings. The sixth form of support is a shared social reality. This is the "sharing of similar experiences, values, and views that provide a basis for self-evaluation through social comparison" (Heil, 1993, p. 146). Finally, personal assistance is a type of support given by those who spend time with the athlete and make use of their skills, knowledge, and/or expertise in order to help the athlete accomplish her/his tasks.

It is believed that one person or one specific group of people, such as therapists, cannot provide all of the social support needed by the injured athlete (Hardy & Crace, 1993; Heil, 1993; Richman et al., 1989; Wiese-Bjornstal & Smith, 1993). For example, technical appreciation and challenge is provided only by those people who understand the technical aspects of the sport and/or the rehabilitation, namely coaches and therapists. Emotional support and challenge is provided mainly by those people who are personally concerned about the athlete, such as parents and friends (Richman et al., 1989; Rosenfeld et al., 1989). Those people who share similar life experiences to the athlete, such as friends and teammates, are

able to provide shared social reality support (Richman et al., 1989; Rosenfeld et al., 1989).

Thus, it is very important that the health care professional team help the athlete maintain high levels of social support. Not only can they provide social support, but they can also encourage the athlete to attend practices and games in order to gain support from coaches and teammates. Hardy and Crace (1993) stated that if an injured athlete is able to maintain a socially supportive environment throughout the time she/he is not participating in the sport, many benefits can be obtained in terms of physical health and emotional well-being. These benefits arise because "when individuals perceive the world as supportive, they feel that the resources necessary for the attainment of their goals are available to them, either from within themselves or from their support network" (Hardy & Crace, 1993, p. 126).

Self-Concept

Throughout a lifetime, a person changes her/his self-evaluations and subsequently the overall value she/he places on her/himself depending on many environmental, physical, and psychological factors/situations (Turner & Helms, 1989). These self-administered evaluations and overall values contribute to one's self-concept. According to Turner and Helms (1989), self-concept is "the manner in which individuals perceive themselves" (p. 521). It also involves "the whole

set of attitudes, opinions, and cognitions that a person has of himself" (Hanks (Ed.), 1986, p. 1386).

In an athletic environment, it has been suggested that an athlete's self-concept may change when she/he experiences an injury due to injury stresses (Griffith, 1982; Heil, 1993; Henderson & Carroll, 1993). Some of these stresses include feelings of a loss of sense of personal control, dealing with an altered self-image, threats to life goals, and decision making under stressful situations. In addition, Griffith (1982) found that an injured athlete's self-concept may change due to feelings of a loss of identity or importance caused by a loss of ability due to the injury. This may cause the athlete to feel worthless or empty, but the ultimate extent of these feelings depends on whether the injury is permanent or temporary.

In addition, Heil (1993) and Turk and Rudy (1992) found that self-concept may be further altered due to the athlete's personalization of the injury. Personalization is a type of cognitive response to an injury and occurs when the athlete "takes undue personal responsibility for injury or giving it some exaggerated special meaning in relation to oneself" (Heil, 1993, p. 42). For example, an athlete may question herself/himself as to why she/he is the only one who gets injured when in reality some of her/his teammates are injured too.

Feelings of personal control over the injury experience,

including the outcome of rehabilitation, is one of the most important factors that has the potential to positively influence an athlete's self-concept. Personal control is belief that one has the ability to alter events in her/his life (Tennen, Affleck, Urrows, Higgins, & Mendola, 1992). This sense of personal control becomes increasingly important in chronic pain athletes who may sometimes feel a lack of control due to the continuation of pain despite efforts to control it (Tennen et al., 1992). As well, the perception of pain intensity has been found to increase in those individuals who feel a lack of control in their injury experiences (Turk & Rudy, 1992).

The theoretical approach that best helps to organize one's understanding of people's perceptions of control or lack of it in their lives is attribution theory. Attribution theory attempts to understand how people perceive and attribute the causes of events and behaviours which ultimately affect them (Cratty, 1989; Gill, 1986). Weiner (1979), one of the leading attribution theorists, found that an interplay existed between three attribution dimensions which affects the behaviour, expectations, and/or feelings of the person making the attributions.

The three attribution dimensions that Weiner (1979) identified were controllability, stability, and locus of causality/control. When making attributions, the person decides if the outcome was under the control of herself/

himself and/or others or not under any person's control. Subsequently, the individual must determine the stability of the attribute and the locus of causality. She/he may attribute the outcome to stable factors, such as ability, or unstable factors, such as effort. At the same time, the individual decides if the causes of the outcome were the result of factors that could be attributed to an internal locus of control or an external locus of control. Internal attributes indicate that the individual believes the attributes can be controlled by herself/himself, such as ability and effort (Gill, 1986). In contrast, an external locus of causality/control signifies the individual believes the attribute is external to herself/himself, such as luck and task difficulty, which she/he has no control over. Thus, within each of these types of locus of control, there exists unstable and stable attributes as well. In the end, an overall interplay occurs between all of the attribution dimensions of controllability, stability, and locus of control/causality which affects one's attributions and subsequent behaviours, feelings, and expectations.

Related to attribution theory are feelings of personal control which is an internal attribute. Thompson (1981) proposed three reasons for the reduction in distress when people feel a sense of personal control. The first proposition was that personal control increases the probabilities of certain outcomes because when an athlete

believes that she/he can actively influence certain outcomes, she/he will be more motivated to reach those outcomes. Secondly, through personal control, an athlete feels confident that the rehabilitation will not become so aversive that she/he is unable to successfully handle the challenges. Finally, personal control reduces feelings of incompetence, helplessness, and hopelessness. This is beneficial in pain reduction because Boston, Pearce, and Richardson (1990) found that the higher the levels of helplessness and hopelessness, the higher the person's pain measure.

Although greater personal control is associated with ratings of less intense daily pain (Tennen et al., 1992), it may also have negative effects. Specifically, Tennen et al. (1992) found that "among those people who experienced more severe pain after believing they could significantly influence their pain, greater perceived control was associated with more daily emotional distress" (p. 197). Thus, an athlete must possess some feelings of personal control in the rehabilitation, but it must be ensured that limits are set on what can be controlled by the athlete. For example, an athlete should not be allowed to believe that she/he will be able to control any comeback to the same level of competition if this is not physically feasible.

Overview of the Psychological Effects of Injury

There is more to an injury than just the physical

assessment and treatment. One must also consider the individual's psychological reactions to and coping strategies with an injury. This would then lead to a highly individualized programme for each person. The programme would treat the ultimate impact of the injury on the athlete's overall health who consists of a highly individualized mind and body. The end result of such a programme would be an increase in the athlete's overall wellness.

CHAPTER II

Methods

Purpose of the Study

When an athlete is injured, physical well-being and the rehabilitation experience, emotional well-being, social support, and/or self-concept variables related to each athlete's unique situation have been identified as having the potential to influence the injury experience positively or negatively. This influence may be exerted not only when the athlete is first injured and involved in the rehabilitation programme, but later in the injury experience when the medical treatment of the injury ceases, yet the athlete is still affected by the injury.

The purpose of this study was to investigate qualitatively the experiences of athletes who have suffered a serious sports injury. Through in-depth interviews, this study sought to construct a thorough and representative narrative of their entire injury experience. The specific goals of this study were:

1) To obtain details of the injury experience from each athlete's point of view in order to construct a series of individual narratives describing the injury experience.

2) To identify common themes from these narratives which characterized the injury experience by examining each

athlete's retrospective regarding which variables she/he believes either positively or negatively impacted the injury experience.

3) To illuminate potential factors which may impact an athlete's experience of an injury and its rehabilitation.

Participants

Fifteen athletes who have experienced a serious sports injury completed the Informed Consent Form shown in Appendix A and were interviewed for this study. A serious sports injury was defined as an injury which caused the athlete to have a long time period of no sports participation and may or may not have prevented the athlete from attaining higher levels of competitive performance. The injury must have affected the athlete for a minimum of three months with respect to feelings of physical pain which hampered performance. The three month time period was selected because it encompassed the majority of the athletes' competitive seasons who were selected for this study.

In selecting participants, it was originally stipulated that the serious injury must have occurred between one to ten years before the day of the interview. In the end, all of the athletes were injured between two to eight years before the day of each athlete's interview as shown in Appendix B, with the average year of injury occurrence being 3.4 years before the day of the interview.

As well, in selecting the participants, it was originally stipulated that the initial serious injury should have occurred when the athletes were eighteen years of age or older. However, in two cases, the athletes were sixteen and seventeen years of age when they first started having physical problems. These two athletes were included in the study because they had more serious physical problems stemming from their injuries when they were eighteen years of age and/or older and had important information to contribute. In the end, the average age of the athletes when they sustained a serious injury was 19.7 years.

All participants were highly competitive athletes at the time of their injuries. As shown in Appendix B, nine University athletes, three Provincial athletes, one National athlete, and two Local All-star athletes were interviewed in this study. These athletes were a select group of individuals with similar motivations, aspirations, and levels of competitiveness who afforded a thorough and representative insight into the injury experiences of highly competitive athletes.

Some of the athletes were currently participating in her/his sport, voluntarily withdrawn from her/his sport competition, retired due to lack of eligibility, or were forced to cease participation due to her/his injury. In regards to this factor, current participation status was not used to exclude subjects from the study. They were all

currently physically affected to some degree by their serious sports injury. All of the athletes reported some levels of physical pain or discomfort in their daily lives.

Data Collection and Analysis

A qualitative method was employed in this study. Although quantitative methods derived from logical positivism continue to be used in sport psychology research, Dewar and Horn (1992) suggested that another type of heuristic paradigm be applied to studying human behaviours, including those which occur in a sport environment. It was believed that the assumptions of positivism do not "allow us to study the richness and complexities that characterize human behavior. Thus, scientists ought to...embrace the possibilities that exist when what it means to know is defined experientially and located within the context of the social structures in which behaviours occur" (Dewar & Horn, 1992, p. 16).

Thus, at the basis of any type of qualitative research is the idea that the researcher must understand the context in which the event under study is occurring or has occurred. By doing so, the researcher must try to understand other people's worlds in order to derive a meaningful account of their actions (Glesne & Peshkin, 1992). This type of qualitative research is termed ethnography and according to Neuman (1991) involves:

> describing a culture and understanding another way of life from the native point of view....People display their culture (what people think, ponder, believe) through behavior (e.g. speech, actions) in specific social contexts....Moving from what is heard or observed to what is actually meant is at the center of ethnography. (p. 340)

In addition, ethnographers are mainly interested in understanding events which have occurred as opposed to understanding what is going to occur in the future (Agar, 1986). In regards to sport environments, Dewar and Horn (1992) believed that "sport behaviours cannot be meaningfully isolated and studied independently of the contexts in which they are played. Sports have different meanings for different athletes and their behaviours are developed within the contexts of these meanings" (p. 18). Thus, behaviours do not occur in a neutral context, but in a context which may be different for every athlete.

In this way, using ethnographic ideas concerning data collection and interpretation, it was important to understand the context of each athlete's serious sports injury experience in order to provide details regarding which factors within the context were important. It was well recognized that this study of injured athletes was not culturally based which is the criteria for ethnographic research. However, the idea that this study involved understanding participants on their

own terms rather than on the interviewer's terms was derived from ethnography.

While qualitative methods do not seek to reduce phenomena to quantifiable units as is the case in the scientific method, they do not lack rigour. In fact, the same skepticism and examination of experimenter bias that characterizes science exists in magnified fashion in ethnography. From a qualitative research point of view, it was important to recognize that because this study evolved post hoc rather than a priori, one needed to be ever-vigilant in questioning the data, the sources, and the interpretation.

Although there were many different types of qualitative research to choose from, an in-depth interview of athletes best served the purposes of this study. Narratives are an important and prevalent way in which humans have communicated since the beginnings of language (Seidman, 1991). A two hour in-depth interview allowed each athlete to provide a retrospective narrative regarding the injury experience. By allowing each athlete to tell her/his story of the injury experience, the potential existed to not only enrich the existing literature on the psychology of sport injury, but to find new factors which may contribute to the understanding of the injury experience. Seidman (1991) stated:

> telling stories is essentially a meaning-making process. When people tell stories, they select details of their experience from their stream of consciousness....It is

> this process of selecting constitutive details of experience, reflecting on them, giving them order, and thereby making sense of them that makes telling stories a meaning-making experience. (p. 1)

The structure of the in-depth interview was based on Seidman's (1991) propositions. Each athlete was allowed to recount her/his story about the injury experience without having to focus on the reasons why certain aspects were important. This was the responsibility of the interviewer through the use of judicious probing during and insightful interpretation after the interview.

In order to facilitate the narrative, each athlete was asked open-ended questions regarding the injury experience as recommended by Seidman (1991). When the athlete answered a particular question, supplementary questions attempted to further explore her/his response (Seidman, 1991). The probe questions were "requests for more: more explantation, clarification, description, and evaluation, depending on your assessment of what best follows what your respondent has said" (Glesne & Peshkin, 1992, p. 85). Thus, the goal in each interview was to have the athlete reconstruct her/his injury experience in as much detail as possible with respect to the four themes of physical well-being and the rehabilitation experience, emotional well-being, social support, and self-concept, and to additional themes that emerged as the interviews progressed.

During each interview, leading questions, which would have influenced the athlete's responses, were avoided (Seidman, 1991). Rather, open-ended questions provided the basis that was to be explored while allowing the athlete to answer the question in any way that she/he wished to since the questions did not presume any answers (Seidman, 1991). Therefore, attempts were made to reduce the impact of biases introduced by the researcher's expectations based on the review of literature and personal injury experiences. The open-ended questions that were initially employed in the study are shown in Appendix C. As a validity check, shown in Appendix D, appropriate probes revisited statements the athlete made earlier in the interview to see if the athlete repeated the same information. Within each grouping of questions, some probe questions attempted to clarify how some statements may have fallen into the four literature review based categories. However, a balance was monitored between using the literature to guide the formulation of the interview questions but not allowing the literature to constrain the interviewer's probe questions.

As a general overview of the interview, the first part dealt with questions regarding the athlete's life history, including athletic experiences, in an attempt to put the participant's experience in context (Seidman, 1991). A second purpose of this section was to facilitate a good rapport with the athlete. Initially, thirty minutes at the beginning of

each interview was set aside for this part. The second part of the interview involved questions concerning the athlete's injury experience. These questions included objective factual ones and questions to which the athlete applied subjective meaning while telling her/his story. These questions were based on the fact that they allow "participants to reconstruct their experience within the context of their lives" (Seidman, 1991, p. 15). Ninety minutes were set aside for this part.

After this initial interview was structured, a pilot interview with an athlete who satisfied the criteria for this study was conducted. This was done to ensure that the interview questions aided the athlete's remembering of the injury experience and open-ended to the extent that the athlete's answers were not constrained. A further purpose was to make the interviewer comfortable with the interview process and the recording of notes so that more confidence in the interview process was gained for additional interviews.

After the completion of four interviews in addition to the pilot interview, the structure and content of the interview format was adjusted while keeping in mind the original research question and groupings of interview questions as shown in Appendices E and F. Specifically, question number two in the initial life history section was covered in question number one of this revamped section by asking the appropriate probes. As well, questions five to ten from the first interview format were placed into the more

general question number nine in the second interview format. Finally, questions numbered five, six, and seven in the second interview were added. It is important to note that through these changes, it was felt that the purpose of the study was more effectively explored. No further changes were made in the interview format.

These changes were enacted because certain weaknesses emerged during the early interviews and were corrected in order to obtain more information about the injury experience. It became apparent after completing four interviews and the pilot interview that the life history section actually made the athletes more uncomfortable than any other part of the interview and it was hard to establish a good rapport. None of the interviewed athletes seemed outwardly comfortable talking about themselves; they did not know what to talk about and did not respond to the probe questions with any amount of enthusiasm. As a result, most of the two hours in subsequent interviews focused on the injury experience, or in other words, on Part B. All of the athletes were enthusiastic when talking about their injury experiences. Lengthening the time frame for Part B from the initial ninety minutes to two hours allowed for judicious exploration of each athlete's injury experience if the time was so needed to conduct such an exploration. If it was felt that a thorough interview was completed before the two hour time period expired, then the interview was ceased. However, in most cases, this amount of

time was needed to probe about the injury experience.

In order to qualitatively analyze the in-depth interview, the concept of grounded theory was used. Theory dealing with how these athletes experienced serious sports injuries developed when analysis of the interview content/data was performed. This was an inductive method in which the theory was contained in and built from the interview data (Neuman, 1991). It was stated by Seidman (1991) that:

> The researcher cannot address the material with a set of hypotheses to test or with a theory developed in another context to which he or she wishes to match the data (Glaser & Strauss, 1976). The researcher must come to the transcripts with an open attitude, seeking what emerges as important and of interest to them. (p. 89)

Specific analysis of the interview data took on the common theme that the qualitative researcher "interprets data by finding out how the people being studied see the world, how they define the situation or what it means for them" (Neuman, 1991, p. 329). In order to analyze the interview data, notes were taken throughout the interview concerning what the athlete said. Each athlete appeared to narrate a story that could be taken at face value during the interview itself; it was perceived that the participants answered all questions honestly.

Additional data was made available for analysis through the tape recording of each interview. This was used if

written notes taken during each athlete's narrative were not detailed enough. In the end, only the recording of the pilot study was listened to and compared with the written interview notes. During this comparison, it was determined that the written interview notes unequivocally paralleled the athlete's narrative. Therefore, the subsequent cassette recordings, while not used due to extreme confidence in the written notes, served to provide a safety net. The recordings would have been listened to if it was felt that the note taking during the interviews was not sufficiently detailed, reliable, and reflective of the athletes' narratives. Fortunately, this never occurred, but the knowledge that tapes were available made the interview process more relaxed and therefore more effective.

In order to analyze each athlete's interview, the interview notes were reduced by marking what was of interest in the text with respect to the topic of study (Seidman, 1991). The pertinent parts of the text were marked through the writing down of each important comment on a separate recipe card for each athlete. The next step involved labelling and grouping the individual recipe cards into specific raw data themes which were constructed during the analysis (Seidman, 1991). Basically, connections were sought among the individual statements which resulted in the construction of interpretative categories (Seidman, 1991). Some examples of labelled raw data themes that resulted from

placing similar comments into general categories were feelings of incompleteness due to the injury, denial, anger, shared social reality, and learning from the injury. As well, no formal analysis took place prior to the completion of all the interviews.

According to Seidman (1991), the final step in interpreting qualitative interview data involves "asking what you learned from doing the interviews, studying the transcripts, marking and labelling them...organizing categories of excerpts" (p. 102). This guided the second phase of the interview analysis because the raw data themes were grouped into larger, more encompassing themes which captured the essence of each raw data theme that constituted each larger theme. The first groupings of the raw data themes were termed first order themes and included such themes as patience and perseverance, empathy, and the role of health care professionals. In some cases, the first order themes were then grouped into more encompassing themes termed second order themes. The end result of this process was that specific first or second order themes were identified which represented that which the athletes felt were important constituents of their injury experiences. For an example of this process see Appendix G.

In summary, in-depth interviewing was employed in order to gather data regarding athletes' retrospective narratives about their serious sports injury experience. Based on

grounded theory, the essence of each athlete's narrative regarding the injury experience was captured by placing raw data themes into appropriate, more general themes. These general themes included experiences, feelings, and comments that were similar across many injury experiences and many athletes. Through this process, attempts were made to piece together many athletes' experiences of injury into one general story that was consensual for this group of athletes studied.

Qualifications of Researcher

In the in-depth interviews, the interviewer was a part of the research instrument. A thorough literature review was completed before embarking on the interviews which served as a guide but did not act as a constraint in the ability of the researcher to maintain an open frame of mind during the interviews. This not only allowed for the possible findings of new data regarding the injury experience, but also allowed for judicious probing instead of assuming what the athlete meant by a certain comment. This ability serves as one of the basic constructs of conducting an open-ended interview and is termed naivety by Glesne and Peshkin (1993). Being naive "entails a frame of mind by which you set aside you assumptions (pretensions, in some cases) that you know what your respondents mean when they tell you something, rather than seek explanations about what they mean" (Glesne & Peshkin, 1993, p. 80).

In addition, the researcher has much knowledge regarding the physical and physiological aspects to an injury due to her undergraduate BHK degree and work experience in a physiotherapy clinic. This provided a base from which could be inferred the amount of education that each athlete had regarding her/his injury and rehabilitation programme.

Finally, and most importantly, the researcher is an athlete who has a sport injury that continues to plague her. The majority of athletes who were interviewed knew that the researcher was a highly competitive athlete like themselves and the idea that the researcher was empathetic to each of the participants was extremely important. Numerous times the athlete would make specific comments about her/his experience and then add that the researcher would know how she/he was feeling because she had been there herself. Each athlete was very comfortable talking to the researcher and the interview was started at some level of trust between the athlete and researcher. Although it is well recognized that athletics is not a culture per se, the sharing of many experiences between the researcher and the injured athletes resulted in a certain level of understanding and comfortableness during the interviews. This level cannot be fully understood unless one has been involved in the same level of competitiveness as the participants and researcher have reached. As highly competitive athletes, numerous experiences are shared that provide a psychological link and level of comfortableness

which is very hard to explain in words, but is very easy to sense in an atmosphere of highly competitive athletes.

Delimitations

1) This study involved athletes between the ages twenty to twenty-nine.

2) No attempts were made to generalize to other ages of athletes or to other types of injured people, such as those on Workers' Compensation, due to differences in pain tolerance or motivation.

3) No attempts were made to generalize the findings to any other level of competitive athletes.

Limitations

1) The interviews did not occur at the same time period post-injury in all athletes. It was not feasible to study a group of athletes who were all injured on or very closely to the same day.

2) Although attempts were made to understand each athlete's injury experience through the point of view of the athlete herself/himself, the researcher may have still bring her own interpretational biases to the data analysis. This shortfall was well recognized by Seidman (1991) who stated that "it is never possible to understand another perfectly, because to do so would mean that we had entered into the other's stream of consciousness and experienced what he or she had. If we could

do that, we would be that other person" (p. 3).

3) Each athlete's narrative that was recorded was limited because her/his life continued to change after the interview which may alter her/his retrospectives regarding the injury experience.

4) The findings from the narratives "are a function of...interaction with the participants and their words" (Seidman, 1991, p. 103). It must be acknowledged that if other researchers asked the same questions as outlined for the interviews in this study, they may have found different facts or interpreted the data differently.

Implicit Hypotheses

Although in-depth interviewing, which was the chosen method of qualitative assessment, was best administered in the absence of explicit hypotheses, some implicit hypotheses were derived from the literature review and aided in the interview development:

1) Those athletes who expected to recover from their injuries more quickly than physically possible, may have viewed their rehabilitation programme differently from those with different expectations.

2) The emotions associated with the initial injury may have been reflective of the personal meaning that an athlete attached to the initial injury.

3) Athletes may have gone through some, if not all, of the

emotional stages associated with accepting serious physical injuries. These five emotional stages included denial and isolation, anger, bargaining, depression, and acceptance and resignation.

4) The athlete may have provided statements in her/his narrative which fall into the five cognitive responses to an injury. These five responses included catastrophizing, overgeneralization, personalizatien, selective abstraction, and dichotomous thinking.

5) The relationship between the athlete and doctor and/or therapist may have influenced the injury experience. Some athletes may have felt more confident in the doctor's and/or therapist's knowledge and abilities in treating their injuries in the best way possible, thus producing a different rehabilitation experience.

6) Some athletes may have understood more about their injuries and their long-term effects and therefore may have felt differently from those with less knowledge. As a result, some of these athletes may have had feelings of greater personal control which may have led to different attitudes regarding the rehabilitation experience.

7) Some athletes may have had and/or still have a strong network of social support and may view their injury experience differently from those with weaker social support systems. In addition, some athletes may have shown feelings of anxiety, uncertainty regarding their injury, and compliance with the

rehabilitation programme differently from others.

Chapter III

Results and Discussion

Introduction

Themes emerging from the interview data were not pre-ordained categories. Rather, the interview data determined the themes rather than allowing the literature review to guide the findings. The first order themes and, in some cases, the second order themes that emerged in this way are presented here in no particular order of priority. Each helps to define the injury experience in its own way and contributes to an overall model of the injury experience based on changing patterns of attributions. Appendices G, H, I, J, K, L, M, and N display the raw data and ordering processes for each first or second order theme.

Injury Diagnosis

In order to facilitate a healthy recovery, the athletes believed that the injury had to be diagnosed properly. They reflected negatively when injury uncertainty occurred as a result of the health care professionals **not knowing what the injury was**[1], **misdiagnosing the injury,** and/or some health professionals **not believing the doctor's injury diagnosis.**

[1] The bolded text without quotations indicates words, phrases, or sentences that are representative of a culmination of comments made by the athletes regarding the issue being discussed.

For example, those athletes who suffered a serious injury and did not receive an immediate diagnosis felt **frustrated** and **angry**. These feelings were **mainly directed toward the doctors** who were attempting to diagnose the injuries. Some athletes said **it was tough not to know** and **"it was one of the worst things"**[2] not knowing what their injuries were because they did not know what to say to people who questioned them about their injuries and the treatment plans.

In addition, those athletes who did receive an injury diagnosis from health care professionals but later discovered that the diagnosis was wrong, identified these **health care professionals** as having **negative roles** in their rehabilitation experiences. The athletes felt **angry, bitter,** and **a lack of trust** towards them. As one athlete said **"You have to trust in a therapist."**

Another aspect of the injury diagnosis theme was the feelings that the athletes had when the **injury was finally diagnosed** after a time period in which no health care professional was able to diagnose the injury. Some athletes felt the injury diagnosis **proved they really were hurt** and others were **relieved**. It was very important to the athletes that they **knew what the injury was by having doctors or therapists diagnose it** and **that the injury had a label** before they **thought about healing** the injury through rehabilitation

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[2] Bolded print with quotations represent direct quotes from the participant(s).

programmes. If the athletes were involved in rehabilitation programmes before their injuries were diagnosed, they did not feel that the treatments were helping because they did not know the exact diagnosis of their injuries.

Injury diagnosis was an integral part of the rehabilitation process. One athlete best captured the essence of this occurrence by saying **"once you know what the injury is, then rehab starts and you are on the road to recovery."** In all of these cases, before a correct injury diagnosis occurred, their recovery process was negatively affected because although they felt physical pain, they expressed the need to have some **concrete diagnosis** in order to improve upon their physical state. The athletes identified the therapists and doctors as being able to give such a concrete diagnosis.

Physical Fears and Adaptations

After a serious sports injury many athletes experienced **fears of reinjury** which were eventually conquered. These fears impacted the athletes' injury experience by making them **worried** and **afraid** of the potential reinjury upon return to competition. Others expressed **frustration** at being preoccupied with thoughts and fears about the possibility of reinjury.

These reinjury fears began when the athletes first returned to their respective sports and lasted for varying amounts of time. However, the athletes eventually **overcame**

their fears of reinjury in some common manners which improved their recovery from their injuries. Those athletes who were able to **reattain their preinjury level of performance** and/or were **able to play at a level they knew they always could** overcame their fears of reinjury. Other athletes overcame their reinjury fears when they **felt confident** in the injured part of their body. This confidence arose when they were **able to perform certain skills** and/or **felt twinges of pain in the previously injured area but they did not incur a reinjury.** Others' fears of reinjury were conquered when they **no longer felt physical pain** from the injury. These athletes gained **confidence** in themselves as their physical well-being improved and they realized they could perform at highly competitive levels again.

In addition, some of the athletes' rehabilitation experiences were negatively impacted as a result of **future fears concerning the physical impact of the injury.** They expressed **fear, frustration,** and **worry** about the effect their injury might have on their future both within and beyond sport. One athlete had and continues to have **"nightmares that when I get older I won't be able to do athletic things."**

Finally, those athletes who were able to **adapt to post-injury physical effects** such as swelling and pain reported **feeling better** about themselves on a physical level. These athletes adapted to these effects by **getting used to them** and **not worrying** about these effects when they did present

themselves. It was clear that many of the athletes experienced many physical fears and made adaptations to their injuries which not only affected their physical well-being and recovery, but also their overall rehabilitation experiences in both positive and negative manners. It is important to note that the athletes were able to adapt to post-injury effects at points further into their injury experiences.

Role of Health Care Professionals

The athletes' rehabilitation experiences were greatly influenced by the **roles that health care professionals** played in these experiences. The types of health care professionals that had the greatest influence both positively and negatively on the athletes' rehabilitation experiences were the **doctors** and the **therapists**. For example, some athletes viewed those health care professionals who **helped them heal/recover from their injuries** as having **positive** roles in their rehabilitation experiences. In these cases, it did not seem to matter what the professionals were like on a personal level as long as they **helped the athletes on a physical level**. For example, one athlete felt that two particular doctors had positive influences on his rehabilitation experience because **"they brought me from a point of not functioning to functioning"** and another athlete viewed her surgeon positively because **"he saved my life by doing procedures that allowed me to continue to play basketball."**

As well, some athletes felt that health care professionals who **had good reputations** due to **word of mouth** and/or **past successes with that athlete** had positive influences on their rehabilitation experiences. Some athletes chose to see certain doctors and/or therapists because they **had good reputations, had past successes with other athletes,** and/or were **friends of the family.** Yet other athletes selected and positively viewed those health care professionals who had **dealt with the athletes' injuries before** and **had successes while doing so.** These successes were based on the fact that the professionals had **helped them overcome their injuries.**

In contrast, those athletes who **were not comfortable** in their rehabilitation settings for a variety of reasons reflected on their rehabilitation experiences **negatively.** Some athletes **did not trust** the health care professionals after such occurrences as **injury misdiagnosis** and the fact that some were **performing unfamiliar procedural assessments.** Others did not feel comfortable with certain health professionals because they had **dealt with good people before** and their present ones paled in comparison.

As well, athletes reflected **negatively** on their rehabilitation experiences when the health care professionals **acted in unprofessional manners.** The first way in which unprofessional behaviours were exhibited occurred when some doctors and therapists **did not believe the athletes were**

injured and told the athletes that the **pain was all in their head** and/or they were **making up the injury.** For example, after being told the pain was in his head, the athlete said that **"it felt like an arrow had been stuck in my heart."** Similarly, the athletes felt that therapists acted unprofessionally when they **called the athletes wimpy** because of **complaints about the pain.** Regardless of the origins of these perceived unprofessional behaviours, all of the athletes identified the health care professionals as being an integral part of their **negative** views concerning their overall rehabilitation experiences. Subsequently, it was evident that the relationships between health care professionals, namely the doctors and therapists, had the ability to negatively or positively influence the rehabilitation experiences of athletes.

Finally, **injury education** was found to impact the athletes' rehabilitation experiences in both **positive** and **negative** manners. When athletes **did not receive injury education** and/or **did not understand their injuries** they viewed this as a **negative** aspect to their injury experiences. The athletes felt a lack of education because they **did not understand the terminology,** the **doctors** and **therapists were too busy to explain,** and/or the **doctors** and **therapists simply did not explain** the injury and the rehabilitation procedures.

In contrast, those athletes who **were educated about their injuries** viewed this as a **positive** aspect to their

rehabilitation experiences and their overall injury experiences. This positive influence supports previous research on the benefits of educating athletes about their injuries (Heil & Fine, 1993; Wiese et al., 1991). The athletes felt that those **doctors** and **therapists who took the time to explain the injury** had positive roles in their rehabilitation experiences because the athletes then **understood** their injuries and the healing processes. As well, some athletes were further educated when the **doctors showed them the injury visually**, on an x-ray or skeleton, which led one athlete to feel that **"I knew exactly what I did."**

It was clear that health care professionals, namely doctors and therapists, had an affect on the athletes' overall rehabilitation experiences. These effects were identified as being positive or negative depending on such factors as the **health care professionals' reputations, types of behaviours, their abilities to educate the athletes,** and **make them feel comfortable.** Regardless of the effects, it was important to the athletes that they felt the health care professionals could not only improve their physical well-being by attending to their injuries, but these professionals could also make their rehabilitation experiences more positive.

Affective Domain Responses

Emotional responses to and emotional acceptance of an injury influences an athlete's recovery (Griffith, 1982; Heil,

1993; Ievleva, as cited in Heil, 1993; Ievleva & Orlick, 1991; Kubler-Ross, 1969; Oglivie & Howe, 1986; Rotella & Heyman, 1986; Turk & Rudy, 1992). Although in previous research all injured athletes have been found not to manifest the same emotions (Wiese-Bjornstal & Smith, 1993), the athletes in this study manifested very similar affective responses to their injuries. The affective domain responses that were identified in this study were **anxiety, anger, depression, guilt,** and **isolation.** These types of responses encompassed many emotions which resulted, in most cases, in negative feelings and thus negatively affecting recovery (Carlson, 1992). At the same time, these emotions could have also been considered as eventually benefiting the recovery because some of the emotions, such as anger, depression, and isolation, have been found to be a part of the emotional acceptance of an injury (Griffith, 1982; Henschen & Shelley, 1993; Kubler-Ross, 1969; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986).

Anxiety is a state of uneasiness, tension, and/or inner apprehension (Hanks (Ed.), 1986; Turner & Helms, 1989). In this study, feelings of anxiety occurred during the early parts of the athletes' injury experiences and were rooted in the fact that they were **forced to quit** and/or **forced to take some time off** from their athletic involvement due to their injuries. These athletes were **upset** and had a **hard time accepting the fact** that they would not be able to participate again, if at all, for extended lengths of time. Others were

distressed because their physical conditioning would decrease during their layoffs and/or they were having a good year and their injuries interrupted this progress. Similarly, athletes felt anxiety when they wanted to play the sport but could not due to their injuries. As one athlete said "I found it pretty tiresome because when you want to do something and can't, it takes a toll on you psychologically." Clearly, these athletes felt some levels of anxiety in their injury experiences which indicated that the injuries had significant psychological impacts on the athletes (Heil, 1993; Henderson & Carroll, 1993).

Anger was first identified as being a part of an athlete's emotional acceptance of an injury in Kubler-Ross' (1969) stage theory and subsequently supported by many other researchers (Griffith, 1982; Henschen & Shelley, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986). This feeling was found to exist in these athletes' injury retrospectives. Anger has been defined as "a feeling of great annoyance or antagonism as the result of some real or supposed grievance; rage" (Hanks (Ed.), 1986, p. 56) and, in these injury experiences, was found to be directed at the athletes, themselves, which supported some of the anger literature (Henschen & Shelley, 1993; Rotella, 1982). However, these researchers have also found that anger is directed toward loved ones which was not supported in this study.

Many athletes blamed themselves for their injuries and

thus **felt angry at themselves** in the early parts of their injury experiences. The athletes' blame and anger arose because they **injured themselves performing the same skills that had injured them previously, did not warm-up properly, were "showing off"**, and/or they felt they **should have told a health care professional about their injuries sooner.** In two cases, the athletes blamed themselves for their injuries and became angry because a **coach** and a **therapist told the athletes the injuries were there faults** because their training techniques were improper. In one case, the athlete was **very angry at himself** because he lost his temper in a competition and **"retaliated"** against an opponent which resulted in him seriously injuring his ankle. Regardless of the origins of their anger, it was evident that many of the athletes felt some level of anger during the beginnings of their injury experiences which was directed toward themselves.

The third major affective domain response was that of **depression** which can be identified when an athlete feels a great sense of loss and distances herself/himself from those who could provide the most meaningful support (Henschen & Shelley, 1993). As well, depression has been found to occur in the beginning stages of the emotional acceptance of an injury according to Kubler-Ross (1969) and supported thereafter by many researchers (Griffith, 1982; Henschen & Shelley, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986).

Although none of the athletes in this study received professional help for their depression, some of the participants said that they **felt depressed** during the early parts of their injury experiences. This depression stemmed from the fact that the athletes **were not able to participate in their sports** for some length of time after being injured.

In addition, some of the athletes felt **guilty** after being injured which was the fourth affective domain response that was identified in this study. Griffith (1982) stated the guilt that many injured athletes feel stems from the fact that the athletes believe they have let the team down. This was supported in this study because the athletes said they **felt guilty over letting the team down** due to the fact they were unable to participate for an extended time. These athletes felt they were not only **letting teammates down**, but **coaches** as well. In one extreme example, an athlete felt she **"was letting the whole world down"** because her coaches, teammates, friends, and family had such high hopes for her future success but she was forced to quit her sport due to her injury.

The fifth affective domain response these athletes had was that of **isolation** and **loneliness**. These feelings have been identified as being an integral part of an athlete's acceptance of the serious injury (Griffith, 1982; Henschen & Shelley, 1993; Kubler-Ross, 1969; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986). In the majority of the interviews, the athletes said they felt **isolated** and **not**

part of the team during the early and middle parts of their injury experiences. Some of the athletes felt **isolated from the team** because they were **training alternatively** in parts of the athletic complexes that were **not close to where their teammates were training.** As well, some athletes **who did attend games and practices** felt **left out** because they **were unable to participate** with their teammates. As time went on, some athletes felt even more of an **outsider** which led one athlete to state that her isolation feelings arose from the fact that **"I wasn't part of the inside jokes that come from the...meets that I wasn't going to."**

In addition, some athletes who were in their first year of University competition at the time of their injuries **felt isolated from the team** because they **did not get to know their teammates** and therefore had **not established a set of friends** at the time of the injury. As well, those athletes who did not attend any practices or games throughout their injuries felt lonely because they **liked training with their teammates** and **could not due to the injuries.** In contrast, a few of the athletes who were unable to practice due to their injuries **stressed the importance of attending practices and games** because they **felt like a part of the team** and therefore **did not feel isolated.**

It was clear the interviewed athletes exhibited five affective domain repones due to their serious injury experiences which came in the forms of **anxiety, anger,**

depression, guilt, and **isolation.** These affective responses presented themselves in the early stages of their injury experiences and lasted for varying amounts of time depending on the individual athletes. Regardless, all of these kinds of affective responses affected the athletes' emotional state and injury recovery.

Cognitive Domain Responses

Cognitive domain responses were identified as being an important constitute of the athletes' injury experiences. The athletes' cognitive domain responses consisted of **denial, cognitive distortions, feelings of incompleteness, acceptance and resignation,** and **determined coping.** These types of responses mainly affected the way the athletes thought about their injury experiences which were indicative of cognitive processes (Kimmel, 1990).

In most cases, the emotional acceptance of an injury has been found to begin with denial on the part of the injured athlete as first proposed in Kubler-Ross' (1969) stage theory and later supported by many researchers (Griffith, 1982; Henschen & Shelley, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986). When experiencing denial, the athlete is "shocked, numb, and has difficulty in accepting his or her physical trauma...This approach is compatible with their well-developed 'athletic attitude' that emphasizes 'never giving up' and 'striving to beat insurmountable odds'"

(Henschen & Shelley, 1993, p. 254). In order for the athlete to move on to the next stage of injury acceptance, she/he must be prepared for the eventual outcome of the injury. The athlete reaches this level of preparedness when she/he ceases belief in the myth of athletic invulnerability or invincibility (Henschen & Shelley, 1993).

In this study, the majority of the athletes experienced **denial** in the very beginnings of their injury experiences. When the athletes initially felt the injury pain and/or lost some physical functional ability due to their injuries, they thought that **the pain would go away** and the **injuries were not serious.** In some cases, the athletes had these thoughts despite the fact they were told by health care professionals that their injuries were very serious, such as a stress fracture and a separated shoulder. Some athletes **made excuses for the reasons why they were feeling pain**, such as not being used to the physical training or being too young to be seriously injured. Others **minimalized the seriousness of their injuries** when they **acknowledged they were hurt, but not to the extent they really were.** For example, one athlete heard his ankle crack but **"I thought I just sprained it"** and another athlete believed that her intense foot pain was the **"result of a sprain"** and it was nothing more serious. Similarly, when some athletes realized they were injured they began **to hope that the injury was not too serious.** For example, one athlete **realized** she hurt her knee but was **hoping**

she did not tear one of her ligaments. As well, a few other athletes were **hoping that the doctors would not find anything the matter** when they were receiving medical attention for their injuries.

One aspect of the athletes' injury experiences that was incorporated into their sense of denial was their **feelings of depersonalization** which have been found to occur when athletes feel that the injury has not happened to them (Heil, 1993; Henschen & Shelley, 1993). Similarly, it has been found that athletes' emotional well-being is further complicated during denial when they believe that injuries only happen to others (Henschen & Shelley, 1993). In this study, many of the athletes had the attitude of **why me?** and/or **I can't believe this is happening to me** immediately after being injured. In fact, one athlete carried these thoughts further by stating that her **"knee injury should have happened to others who aren't as active and they won't lose so much."**

Clearly, all of these athletes **denied** the injury severities at the outset by **making excuses for the pain, thinking the pain will just go away, minimalizing injury severity, hoping the injury was not too serious,** and/or by **simply denying they were seriously injured.** In addition, some athletes' senses of **depersonalization** contributed to their feelings of denial.

Furthermore, the athletes exhibited three types of cognitive distortions in their injury experiences. Cognitive

distortions occur when people inaccurately interpret situations due to distortions in thinking which ultimately affect their emotional well-being. The three distortions of catastrophizing thoughts, selective abstraction, and dichotomous thinking have been found to exist in athletes' injury experiences, not only in this study, but in previous research as well (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992).

The majority of interviewed athletes had catastrophizing thoughts shortly after suffering their serious injuries in which the **injury severity was exaggerated.** Most of these athletes **thought they would never play again for the rest of their lives** or **thought they were done for the season.** As examples of this kind of distortion, after suffering a serious injury, one athlete thought that **"I'm done playing sports forever"**, another athlete thought **"that's probably the last chance I'll get"**, and one thought **"oh no, there goes the rest of the season."**

Selective abstraction was the second type of cognitive distortion that some athletes experienced and has been found to occur when one attends to certain injury aspects that have little meaning in relation to the entire experience (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992). These researchers have found that selective abstraction has negative impacts on emotional well-being because the athlete has an inaccurate interpretation of the injury. This interpretation

arises from her/his thoughts and comparisons to occurrences that do not relate to the injury. Many athletes viewed their most recent injury experiences in a **more negative manner** because they **made comparisons** between their most recent injury to their previous injuries which may or may not have been physically alike. They compared such things as pain levels and healing time and as a result viewed their most recent injuries in a **more negative light** since such **comparisons** were not very favourable.

In contrast to these negative attributes associated with selective abstraction, this study found that some athletes' **comparisons to previous serious sports injuries** actually caused the athletes to be **more accepting** of their injuries. They seemed to be comfortable with the **physical familiarity between the injuries** thereby **reducing** some of their **fears about the injuries**. These injuries did not necessarily have to be of the same type in the same area of the body, but what seemed to be the beneficial link in the athletes' comparisons was that of **knowing what serious injury pain felt like.**

Thus, it was found that some athletes experienced selective abstraction distortions that were helpful and others experienced the same type of distortion that negatively impacted their injury experiences. At this time, no literature exists to inform one of when selective abstraction can be used in a beneficial manner and when it may be used to negatively impact the athlete and her/his injury experience.

Dichotomous thinking was the final cognitive distortion that existed in these athletes' retrospectives which supported the literature (Beck & Emery, 1985; Beck et al., 1979; Turk & Rudy, 1992). Dichotomous thinking has been found to occur when the athlete reduces the injury experience into all-or-none categories (Heil, 1993). During these athletes' injury experiences, dichotomous thinking was identified as occurring somewhat early in their experiences when they thought the **pain was all in their head** after a time period in which health care professionals were unable to diagnose their injuries. Although these athletes felt the pain, they did not believe it existed physically in some cases because a health care professional **was not able to label the pain as being a certain, specific injury.** Similarly, one athlete began to wonder if the **"injury was real"** after x-rays were negative and she could not describe how the pain felt to others. In other instances, athletes thought the pain **was all in their head** when the **coaches** and **therapists did not believe the athletes were injured.** In one case, this occurred when an athlete's **injury was not healing as fast as medically expected.**

As well, the **timeliness of the injury** contributed to athletes' cognitive domain responses. Loeser stated (as cited in Heil, 1993) that the time in an athlete's season or career that the injury occurs has the potential to affect her/his emotional well-being due to feelings of incompleteness. Some of the athletes who have experienced one or more serious

sports injuries felt they **have never been able to prove** or **find out how good they could be** and/or they felt the injuries had **prevented them from attaining higher levels of competitive performance.** Some athletes identified a **feeling of incompleteness** during their competitive seasons because they **missed practices** and **games which prevented some chances to become better in their sports.** This led one athlete to say **"I didn't fulfil my season."**

Those athletes who were injured in their last year of athletic eligibility or were forced to quit due to their injuries seemed to have a higher degree of feeling incomplete. They felt the injuries **prevented them from playing as well as they knew they could have in an uninjured body** and since they were no longer able to play at that level of athletics they **never found out how good they could have been.** Some of these athletes felt **mad** and **depressed** over this fact leading one athlete to feel that she **"wasted my University basketball career"** because she was often seriously injured. One of the athletes who was forced to quit due to her injury still felt **incomplete** and that she **has more to prove** with respect to how well she can perform as an uninjured athlete. This athlete still feels that **"I don't want it to be over"** and she may even return to her sport in the near future to address this feeling.

In the end, it seemed the athletes' feelings of incompleteness were paired with yearnings of wanting to find

out how good they could be without being injured. These feelings of incompleteness have stayed within those athletes who were injured in their last year of competitive performance more so than with those athletes who felt they had another chance to redeem themselves during the next competitive season.

As time went on in the athletes' injury experiences they **realized their injuries were serious** and **accepted this fact.** This supported the original stage theory literature by Kubler-Ross (1969) and many subsequent researchers who have regarded acceptance as the final stage in athletes' processes of emotional acceptance of their injuries (Griffith, 1982; Henschen & Shelley, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1986). This stage can be viewed as helping the athletes' injur·· emotional well-being become more positive. This is because once athletes accept their injuries and the consequences, they will reintegrate themselves into their settings which they may have removed themselves from as a result of trying to comes to terms with their injuries (Henschen & Shelley, 1993).

Many of the interviewed athletes **realized** and **accepted** the fact they were seriously injured after they **had taken some time off** and **realized their injuries were not healing.** Others **needed to see the seriousness of their injuries** through **physical signs** such as swelling and x-rays, **audible signs** such as a bone breaking, or through the use of **physical aids** such

as crutches. Yet others needed some **decreased athletic performance signs** such as running slower to indicate and accept that their injuries were serious.

The final cognitive domain response that the athletes had to being seriously injured and which followed injury acceptance was that of **determined coping**. Heil (1993) stated that determined coping "implies acceptance (to varying degrees) of the severity of injury and its impact on the athlete's short-term and long-term goals...characterized by the purposeful use of coping resources in working through the process of recovery" (p. 37). This was linked to injury acceptance because once the athletes in this study accepted they were seriously injured they **became focused on getting better**, thus improving their emotional well-being. These feelings did not occur at the same time post-injury or as a result of the same experiences with all athletes. Rather, some athletes were determined to get better and participate again after they **took some time off** or **were able to perform some athletic skills they could not perform when they were injured.** For one athlete, his determined coping arose after he **discovered he would not need surgery to mend his injury** and for another it arose after she **had surgery** and **realized she would have to work hard** in her rehabilitation but this **"work would be worth it."** One athlete who experienced the same type of injury a couple of times became **familiar with the injury experience** and just **"concentrated on the future because I knew**

what to expect." Another athlete became determined due to the fact that the injury had occurred one and a half months previously and he simply felt that **"it was time to think about the future and work on getting it better."** The final motivational factor that helped the athletes become determined was that of a **feeling they had to prove to themselves** and/or **others that they could comeback from their injuries.**

Regardless of when, with respect to a definite time post-injury, and how this determined coping became an integral part of their injury experiences, it was nonetheless identified by the athletes as occurring and helping them focus on the healing of their injuries. Determined coping was the result of many different thoughts and experiences that the athletes had with one of the only similarities being that most of the athletes felt some degree of wanting to get better. This was reflected by their renewed motivation in their rehabilitation programmes.

Shared Social Reality

Many of the athletes identified social support as being a **very helpful** and **positive** aspect to their injury experiences. In contrast, those athletes who did not feel a sense of social support viewed this as a **negative** aspect to their injury experiences; they wanted to feel that others **cared more about them and their injuries.**

Hardy and Crace (1993), Pines et al. (1981), and

Rosenfeld et al. (1989) recognized that seven forms of social support exist in an injury experience which include listening, technical appreciation, technical challenge, emotional appreciation, emotional challenge, a shared social reality, and personal assistance. However, in this study, the athletes identified only one type, a shared social reality, from this list. This form of support is the "sharing of similar experiences, values, and views that provide a basis for self-evaluation through social comparison" (Heil, 1993, p. 14).

Many of the athletes spoke of the value of **seeing other athletes who were injured in the therapy room** or **seeing injured teammates/fellow competitors** throughout their injury experiences. This was because the athletes **did not feel they were the only ones hurt** and that **others were going through the same things as they were** with respect to physical and emotional hardships. This made the athletes' **injury experiences easier** because they **did not feel so isolated** and **felt a sense of support** when interacting with the other injured athletes.

The athletes also spoke of the value of a shared social reality with respect to **seeing other athletes who were seriously injured and successfully came back from their injuries.** This type of support came not only from previously injured teammates, but also from competitors who would approach the injured athletes with their own injury stories. The injured athletes viewed this as **helpful** and gave them **hope**

that they would get better as well.

Another aspect that contributed to shared social reality was the **positive** and **negative roles that health care professionals played** in their experiences with respect to these professionals being **able to relate to** the athletes. The athletes spoke of the **value** of seeing health care professionals who **understood how important athletics was to them** and that **"your whole life revolves around sports."** It was evident that the athletes felt these health care professionals shared similar values and views with them.

The athletes also spoke of the benefits of going to either a health professional who had **specialized in sport injuries** and/or who was a **former** or **current competitive athlete.** In seeing sports specialists, the athletes felt that the professional **had worked with many other athletes** and **"knew what it was like for athletes to deal with pain."** Similarly, some athletes felt that health professionals who were former or current competitive athletes **better understood** what it was like for the athletes to be injured. They seemed to feel a **greater sense of support** from these specialists because they felt the specialists could relate to them as athletes.

In contrast, some athletes felt that health care professionals who **could not relate to them as athletes** had **negative, unsupportive roles** in their injury experiences. The athletes felt these professionals **never realized how important athletics** were to them and subsequently **didn't understand** the

impact that the injuries had on the athletes' lives. For example, a family doctor dismissed a particular athlete's injury and athletics as unimportant and although this athlete felt **"this is a big deal, this is my life"**, the doctor never understood this and she viewed the doctor as non-supportive.

Empathy

Empathy is "the power of understanding and imaginatively entering into another person's feelings" (Hanks (Ed.), 1986, p. 500). In this study, listening, emotional support, and caring and encouragement contributed to the athletes' feelings of empathy. Although listening and emotional support have been listed as separate forms of social support by Hardy and Crace (1993), Pines et al. (1981), and Rosenfeld et al. (1989), they were grouped as being a part of empathy. The athletes' feelings of empathetic support were felt when other people could identify with them, understand what they were going through in their injury experiences, and provided reassurance that they would be all right.

Many athletes identified the **health care professionals** as being the **main contributors** to the listening aspect of empathy. They felt those professionals **who took the time to listen** to their concerns and questions provided much social support in their injury experiences. Along the same lines, the athletes felt **thankful** for the support that the health professionals gave to them by **spending time** with them during

their injury experiences. Some of the athletes appreciated it when the health care professionals were **thorough** in the injury diagnosis, rehabilitation, and in answering any questions the athletes had. The athletes also felt supported when the health professionals **explained** certain aspects of their injuries and rehabilitations. As well, these athletes appreciated the empathy they received from the health professionals because they **understood** that the athletes were suffering and **showed an interest** in helping the athletes get better.

In contrast, many athletes felt that a **negative** aspect to their injury experiences occurred when health care professionals **weren't listening** to them and/or **were not taking the time** to be with them and explain certain aspects of their injuries. Some athletes believed that the health professionals **didn't have time for them** because they were more concerned with **getting people in and out as quickly as possible.** Others felt the health care professionals **had favourites** and **paid more attention** to these people. Subsequently, this made the athletes feel like they **were a pain** and **were not welcome** in the clinic or other type of health care setting. Yet others felt **frustrated** that the health care professionals were not empathetic to their concerns about their injuries. The athletes believed they **were not being listened to** and did **not feel** any sense of social support.

In addition, emotional support was found to contribute to the athletes' feelings of empathetic support. Emotional support is the support of an athlete through an emotionally demanding time (Rosenfeld et al., 1989). The athletes believed that the three groups of coaches, teammates, and family and friends contributed, in most cases, in a positive manner to their sense of emotional social support. The athletes **felt good** when their coaches were concerned about their injuries and thus were encouraging them during their injury experiences. In addition, the athletes felt supported when their **teammates asked about their injuries** and **showed concern.** Finally, the majority of the athletes felt a sense of **security** and **encouragement** when they were surrounded by family and friends during their injury experiences. Some athletes felt that family and friends viewed them **more as a person** and **not just an athlete** and stressed there were **other aspects to their lives that were more important than athletics.** These athletes felt they could contribute to other's lives in more than just athletic ways which was important because they could not be athletes due to their injuries.

In contrast, some athletes identified the **coaches** as not being emotional supportive during their injury experiences. Some athletes believed their coaches **did not have time for them** because they **were not one of the top athletes.** Others felt the coaches were **more concerned with the uninjured**

athletes who were able to compete. In other instances, the coaches did not emotionally support the injured athletes because they **did not believe** the athletes were injured too seriously, if at all.

Clearly, the major sources of emotional support that the athletes identified came from coaches, teammates, family and friends which supports previous research (Hardy & Crace, 1993; Richman et al., 1989; Rosenfeld et al., 1989; Wiese-Bjornstal & Smith, 1993). All of these three groups of people had the potential to positively or negatively impact the athletes' feelings of empathetic support. It is interesting to note that virtually no mention was made to the role of the health care professionals in emotional support.

The final manner in which athletes felt empathy occurred when they were being **cared for** and **encouraged** not only on a physical level but on an emotional level as well. The main way that athletes felt encouragement was through **health care professionals** who **reassured** the athletes they would recover from their injuries. The athletes also felt encouraged when the health care professionals **were encouraged** by the athletes' physical progress and **relayed this encouragement** to the athletes.

Altered Self-Concept

Self-concept is the perception that individuals have of themselves (Turner & Helms, 1989) and involves "the whole set

of attitudes, opinions, and cognitions that a person has of himself" (Hanks (Ed.), 1986, p. 1386). In all of the interviews, the athletes mentioned various thoughts and feelings that were indicative of a change in how they viewed themselves. In most cases, this change occurred in the way they perceived themselves as athletes because the main identity they had of themselves was that of athletes. The general trend in the changing of their self-concept was one which left them questioning their athletic abilities after suffering a serious injury; they no longer viewed themselves as special athletes who were better than other athletes. Rather, they viewed themselves as mediocre athletes at best who may never attain their pre-injury level of performance.

The athletes were forced to deal with an altered self-concept as a result of changes in their general, overall self-perceptions and more specific physical self-perceptions. Thus, the athletes not only experienced changes in their views of themselves as physical beings, but also in their overall views of themselves which supports Griffith (1982), Heil (1993), and Henderson and Carroll (1993). Focusing on overall self-perception changes, it was found that athletes felt **helpless** and **"like an invalid"** in the early parts of their injuries because they were unable to be as mobile as before the injury. Many of the athletes' mobilities were reduced because of having to wear casts and being unable to walk as much due to physical pain. Another reason that athletes felt

helpless was because **others were always wanting to do things** for them. As a result of these feelings, the athletes perceived themselves as **dependent** on others and thus felt they had experienced a **loss of independence.** This loss of independence has been recognized by Griffith (1982) as a feeling that injured athletes experience.

In addition, it was found that the participants strongly **identified themselves** as athletes and when they were no longer able to be athletes as a result of their injuries, they felt like they **lost some of their identity.** For example, one athlete said that his sport **"defined who I was...it made me special"** and another athlete said that his sport **"gave me a sense of security and self-confidence."** As a result of these loss of identity feelings, the athletes' self-concept changed in such a way that the athletes did not view themselves as highly as before the injury. They did not feel **as whole** as when they were able to participate in athletics which had negative ramifications on their overall wellness.

The athletes' perceptions of themselves were further changed as a result of their **concern about what others were thinking about them and their injuries.** Some athletes were concerned about whether **other people believed** they were injured and other athletes wanted to **prove** to other people that **they could play through the pain** of the injury. As well, some athletes identified that they were concerned with others **who didn't know the athlete was injured** and their subsequent

thoughts on why the athlete was not performing well. For example, one athlete said that **"I didn't want anyone to think I was playing half-assed"** when these others were not aware that he was injured. Many of the athletes were concerned with others not believing or not knowing that the athletes were injured, and as a result, expected the athletes to perform at certain levels based on them being healthy.

Other's expectations of the athletes had an affect on the athletes' perceptions of themselves which has been termed self-fulfilling prophecies (Gill, 1986). In this type of situation according to Gill (1986), when expectations are based on inaccurate information they can be damaging to the athlete who ends up acquiring some level of belief in others' expectations. For example, when a coach felt the athlete was not performing well based on no knowledge of the athlete's injury severity, the athlete began to believe that he was not a good athlete without giving any consideration to his injury. As well, many of the athletes felt **embarrassed** and **bad** as a result of others' perceptions of them. It is important to note that these other people were never identified as one specific group of people. Rather, these others included **coaches, teammates, friends, family,** and **strangers.**

The main way the athletes' self-perceptions changed was through **difficulties in admitting they were in pain** and **needed help** in some manner in the beginning of their injury experiences. Many of the athletes repeated the same theme

that they **didn't want to be considered** and **look like a wimp** by telling others they were in pain and/or should stop competing. Others **didn't want to look like a wimp in front of their teammates** and therefore did not cry immediately after being injured. Many of these athletes had to deal with their self-concept changing from one of **being invincible** or **indestructible** to a self-concept that they were not superhuman and had to **take the time to let their bodies heal.** As one athlete said **"we don't want to admit that we have to stop."**

As well, some of the athletes identified certain people that contributed to their initial self-concept of being **indestructible** or **invincible.** Some of the **coaches** and **parents** of the athletes always told the athletes **to get tough** or **tough it out** when they were in pain. Other athletes identified **teammates** or **fellow competitors** as sources of their indestructible image because these people **had experienced serious pain** but kept on competing. Finally, **role models** from television, the movies, and professional sports helped make the athletes believe they were invincible. For example, one athlete mentioned his role model of **Rocky** and another mentioned the fact that professional athletes, such as **Doug Gilmour** who had his ankle frozen before every 1993-94 NHL playoff game, have been glorified as being indestructible and that all athletes should model their behaviours after these people.

Specific changes in the athletes' physical self-

perceptions also contributed to overall changes in the athletes' self-concept. Some athletes viewed themselves in physically different manners due to the **effects of the injury on their physical self.** Athletes classified the in tial physical injury effects as **disgusting, gross,** and **ugly.** In all of these cases, the athletes were female which supported Ford's (1983) finding that women are affected to a greater degree than men when injuries cause loss of physical attractiveness. As well, many athletes' physical self-perceptions and thus self-concept changed as a result of **having to wear physical aids** such as knee braces after their injuries. Athletes felt that physical aids were **restricting, limiting,** and many were **self-conscious** about wearing them. One athlete felt that wearing his back brace was **humiliating** because he was an athlete and felt that he should not have to wear the brace. This athlete was also forced to wear the brace outside of the athletic environment which made him feel that he was **"identified as the person with the brace."** In contrast, a few athletes viewed their physical aids as something that **built up confidence** in their injured area and thus viewed themselves as **stronger** and **better able to perform.**

The final aspect that caused athletes to change their self-concept resulted from the fact that they felt their **bodies had let them down** due to the injury. Some athletes **wished their bodies were stronger, felt their bodies were wimpy,** and/or **their bodies hated them.** This sentiment was

best summed when one athlete said that she was thinking after a failed comeback from a back injury, **"the race horse is dead, put me in a pasture."** Clearly, the athletes' images of themselves changed from that of highly tuned, physically elite athletes to one of athletes with physical limitations and bodies that could no longer function optimally.

Threats to Sport Goals

Threats to life goals have the potential to affect one's self-concept because they may no longer be able to attain a goal that they set out to accomplish (Heil, 1993; Henderson & Carroll, 1993). Similarly, after analyzing the interviews, it was quite evident the athletes felt their **sport goals were threatened** as a result of their serious injuries. This ultimately led to changes in the athletes' self-concept because they **had doubts about their athletic futures** which were important parts of their beings and thus many goals were centred around this aspect to their lives.

When the athletes first returned to their sports after the injuries, they felt **nervous** and **scared** about whether they would be able to play the sport. As well, most of the athletes experienced **distress** over whether they would be able to **attain their pre-injury level of competitive performance.** Some athletes experienced this **distress while competing** and **not performing in the way they knew they could** in a healthy body. Others experienced this **distress while recuperating**

from their injuries; they were wondering **if they would be able to do the drills, keep up with teammates,** and/or **reattain their position on the team.**

As well, some athletes stressed the **longing to compete in a healthy body** in order to beat other athletes they had defeated in pre-injury competitions and/or in order to discover how well they could perform. Some athletes were **distressed** because they **did not want to return at less than 100%.** In fact, when one athlete attempted a comeback after her injury and did not perform well, she believed **"that by not running well, I began to believe that I couldn't run anymore."** Similarly, another athlete said **"that was my biggest fear, not being able to do it."**

Clearly, the athletes experienced changes in their self-image as a result of these changes in the way they viewed themselves on physical levels. Distress and worry over the physical injury effects led many athletes to think, if not believe, they may not be as good as before their injuries. As well, the use of physical aids affected these athletes because they were self-conscious about the aids and viewed themselves as athletes wearing these physical aids, not just as athletes.

Sense of Personal Control

Personal control encompasses the individual's perception that she/he can alter events and has been found to aid in alleviating distress (Burger, 1989). In this study, many

athletes felt a lack of control when they experienced multiple serious sports injuries which was reflected by their comments of **not again** and/or **here we go again.** The athletes began to **wonder what injury is coming next** and experienced **anger** and **frustration** over becoming injured again. They began to **personalize** the injuries by questioning **why they were always getting injured** which supported Heil's (1993) and Turk and Rudy's (1992) findings that personalization of an injury leads to an alteration in the athlete's self-concept. Heil (1993) stated that personalization occurs when the athlete "takes some undue personal responsibility for injury or giving it some exaggerated special meaning in relation to oneself" (p. 43).

In addition, some athletes felt a **lack of personal control** in their injury experiences as a result of **not being able to do anything actively to help in the healing process of their injuries.** For example, some athletes broke bones and just had to wait and see if their injuries were healing properly. These athletes were **upset** and **frustrated** because they could not do any active rehabilitation due to the nature of their injuries. This changed their self-concept because they felt they could not control any part of the injury healing due to its nature and they were used to being able to put forth some degree of effort and receive favourable results.

The athletes' feelings of personal control were further

diminished when they **were doing all of the therapy they were supposed to** and **their injuries were not getting better as fast as they thought the injuries should get better.** This supported one of the findings of Tennen et al. (1992) in which those people who perceived a high degree of control over their injury actually experienced more distress. Many of the athletes in this study felt they **could control their injury progress** by performing all of the rehabilitation techniques that were given to them. They seemed to relate this to the athletic environment in which if they trained intensely and in accordance with certain techniques aimed a improving their skills, they ultimately attained improvement which led to feelings of personal control.

The comment that best sums the sense of lack of control in the athletes' injury experiences was that **"I felt I had a lack of control in the whole injury experience because the injury had control of me and it wasn't listening to my commands to get better."** This lack of control has been found to alter one's self-concept (Tennen et al., 1992). The athlete may be less motivated to reach certain outcomes if she/he does not feel she/he can actively influence these outcomes and/or have increased feelings of incompetence, helplessness, or hopelessness which have various influences on the way in which one views herself/himself (Thompson, 1981). As Henderson and Carroll (1993) stated:

> Often an individual's identity is contingent upon his or

her role as an athlete. The danger is such a narrow identity focus is that an athletic career is short-lived with injuries often viewed as major crises. This kind of threat to one's self-worth is often so highly stressful that other attributes of the individual may be totally overshadowed by the athletic identity. (p. 16)

Summary

Several important findings have arisen from this study. The positive and negative impacts of injury diagnosis and physical fears on athletes' injury experiences have been illuminated. As well, the athletes identified the increased breadth of health care that was expected out of the health care professionals involved with the athletes, namely doctors and therapists. Through this study, it became evident that these professionals had to potential to influence the athletes' rehabilitation experience and overall well-being not only through the provision of physical injury care, but also through the provision of a shared social reality, listening support, and encouragement. Thus, the health care professionals were expected to care for the overall health of the athletes, not just the physical side of the athletes' injuries.

Furthermore, this study identified many emotional and cognitive factors that have been found to exist in previous research. However, what was unique with this study was that

upon analysis these factors were not placed into the same three groups of emotional reactions to, acceptance of, and cognitive responses to an injury as previous researchers have done (Beck & Emery, 1985; Beck et al., 1979; Griffith, 1982; Heil, 1993; Henschen & Shelley, 1993; Kubler-Ross, 1969; Lipowski, as cited in Heil, 1993; Loeser, as cited in Heil, 1993; Oglivie & Howe, 1986; Rotella, 1982; Rotella & Heyman, 1993; Turk & Rudy, 1992). Rather, what was more reflective of these athletes' injury experiences was that they experienced two types of responses to their injuries: affective and cognitive domain responses.

The athletes experienced the five affective domain responses of anxiety, anger, depression, guilt, and isolation mainly in the early parts of their injury experiences. These affective responses were indicative of negative emotional states. However, some of these negative emotional states such as depression and isolation may have eventually aided the athletes' well-being and recovery because they have been previously identified as a part of the grieving process that injured athletes experience (Griffith, 1982; Kubler-Ross 1969; Henschen & Shelley, 1993; Oglivie & Howe, 1993; Rotella, 1982; Rotella & Heyman, 1993). At the same time, a healthy progression of cognitive responses was evident in the athletes' injury experiences. They began with denial, cognitive distortions, and feelings of incompleteness. However, as time went on, their cognitive responses reflected

a more positive well-being because they accepted their injuries and were determined to cope with their injuries and the overall effects. This division into purely affective and cognitive domain responses was new in that although it encompassed previous findings, these responses have never been grouped into two distinct categories. As well, the affective responses occurred mainly in the early parts of the injury experiences. As the injury progressed, the athletes experienced more cognitive domain responses which reflected first negative and then positive impacts on their abilities to cope with their injuries.

As well, the athletes in this study felt that a sense of a shared social reality was important in their injury experiences which supports previous social support research (Hardy & Crace, 1993; Pines et al., 1981; Rosenfeld et al., 1989). However, the athletes further identified that empathetic support was very important in their injury experiences which has not been identified by these researchers as a form of social support in the experiences of injured athletes.

The athletes in this study were forced to deal with an altered self-concept due to their injuries which supports previous literature (Griffith, 1982; Heil, 1993; Henderson & Carroll, 1993). However, this study identified additional factors that affected the athletes' self-concept. Namely, the use of physical aids such as braces, feelings that their

bodies let them down, and worry about what others were thinking about them affected many of the athletes' self-concept during their injury experiences.

One of the most important findings was that the athletes' narratives of their injury experiences reflected a changing locus of control over time. Application of existing psychological theory to previous research findings is minimal. However, the application of attribution theory to the findings presented here was evident from the athletes' retrospectives. They perceived that certain feelings and experiences were the result of factors that they were able to or were not able to control. These internal and external attributions encompassed the athletes' perceived causes of their feelings and experiences as reported in their narratives, which in their minds, were the actual causes regardless of the true reflection of reality.

In the early part of their injury experiences, the athletes felt they had no control over their injury diagnosis by health care professionals. Yet, their recovery was positively affected when their injuries were diagnosed and labelled because they then believed they could **concentrate on healing.** Those athletes who did not receive an injury diagnosis until later in their injuries or who initially received an injury misdiagnosis felt this affected them **negatively** because they did not believe in the rehabilitation benefits until their injuries were properly diagnosed.

The athletes attributed injury education to an external locus of control because health care professionals were the contributors. Those athletes who were **educated about their injuries** reflected **positively** on their rehabilitation experiences which was in contrast to those who reflected **negatively** on their rehabilitation programmes when they were **not educated.** As well, some athletes indicated that negative feelings surrounding their rehabilitation programmes occurred when they were **not comfortable with the doctors** and **therapists** and/or the health care professionals acted in perceived **unprofessional manners.** These athletes felt this was an external attribute because they did not choose to see these health care professionals. It is important to note that injury education occurred in the early parts of the athletes' injury experiences.

As well, the athletes expressed their **fears over reinjury** and **future fears over the physical injury effects** as an internal attribute. Initially, these fears negatively impacted their recovery, but were ultimately conquered later in their injury experience when they believed they had control over them. Specifically, this sense of control was attained when they worked hard and felt they were **able to play at a level they always knew they could, were confident in the injured area,** and/or **were able to perform certain skills.**

Another source of internal control which the athletes felt was beneficial occurred when they were first injured and

selected certain health care professionals to treat their injuries. The athletes' selections were based on the health care professionals' **good reputations, past successes with the athletes,** and/or were **friends of the family.** The athletes perceived that the chosen health care professionals had **positive** roles in their rehabilitation experiences.

The athletes experienced affective and cognitive domain responses during their injuries which negatively impacted their recovery and were attributed to external sources. For example, the athletes attributed some of their feelings of **anxiety** and **depression**, which were evident in the early parts of their injury experiences, to the fact that they **had to take some time off** due to their injuries. It was evident the athletes perceived this could not be controlled by them. Also, they perceived some feelings of **isolation** as originating from their injuries which **forced them to not participate at all** or **forced them to train alternatively in parts of the complex different from their uninjured teammates.**

The cognitive responses of dichotomous thinking and feelings of incompleteness that the athletes' experienced were perceived to be caused by external attributes. The athletes felt that their dichotomous thinking of the **pain being all in their head** originated when health care professionals were **unable to diagnose** their injuries and/or when coaches and therapists **did not believe the athletes were injured.** The athletes also attributed their feelings of incompleteness to

the **time in their season** or **career** when they were injured which they had no control over.

In the early parts of their injury experiences, the athletes had additional affective and cognitive responses which were expressed on the basis of an internal locus of control. For example, many athletes felt **angry at themselves** because they perceived the injuries as being **their faults.** The athletes felt **guilty** because they felt **they were letting the team down** and they felt they **denied** the injury severity despite physical signs which indicated they were hurt severely. The athletes identified these negative emotions as being caused by their own thoughts and feelings which was an internal attribute.

However, as time progressed in their injury experiences, the athletes felt emotionally better due to their cognitive response of injury severity acceptance which led them to feel determined to get better. The athletes felt these responses arose only when they **realized they were seriously hurt** which was an internal attribute. For example, some athletes accepted injury severity only after they had **taken some time off** and **realized their injuries were not getting any better** despite the fact they were told by health care professionals they were seriously injured at an earlier time in their injury experiences.

The athletes attributed their feelings of social support to external sources. This was not surprising due to the fact

that, by definition, social support comes from other people. In general, the athletes viewed social support by others as being a **positive** aspect to their injury experiences. They felt a sense of shared social reality when they saw **other injured athletes in the therapy room, other injured teammates or competitors,** and/or **saw others comeback from their serious injuries.** As well, they identified that **empathetic** support by health care professionals, coaches, teammates, family, and friends contributed to their feelings of social support.

In the early part of their injury experiences, the athletes were forced to deal with an altered self-concept because they felt **helpless** and a **loss of independence** due to external factors. For example, some athletes were physically less mobile due to their injuries and some athletes felt less independent because other people were always doing things for the athletes in attempts to help them. Some athletes' self-image was further impacted due to the **effects of the injury on their physical self** over which they had no control.

As well, the athletes' self-concept changed due to various threats to their sport goals based on the **potential physical injury effects** which the athletes expressed in terms of an external locus of control. They were not sure if their injuries would heal fully based on the seriousness, and therefore, their injuries threatened their sport goals which were integral parts of their self-concept. As well, those athletes who were seriously injured more than once felt a **lack**

of control and that the environment was dictating and had control over them and their injuries.

The athletes experienced additional changes in their self-concept based on feelings that the athletes perceived as internal attributes. When some athletes were first injured they felt that their problems **admitting they were in pain** and **needed help** arose because they had images of themselves as being **indestructible** or **invincible**. After they admitted this and had taken some time off of their sports, many of the athletes then felt their **body had let them down** and was **wimpy**. They felt their bodies should have been more in control so that they would not have been injured which was indicative of an internal locus of control. These feelings ultimately impacted their self-concept negatively.

Despite all of the negative emotions and experiences the athletes felt during the early and middle parts of their serious sports injuries, they believed that they **learned** and thus **grew** from their injuries as time progressed onwards from their initial injuries. In the end, these athletes incorporated personal growth into their injury narratives in order to derive a meaning from their injury experiences. Although many of the athletes' injury experiences were associated with negative feelings and experiences, they seemed compelled to derive something positive out of their experiences. Therefore, the athletes believed they **learned a great deal** from their injury experiences that will be helpful

if and when they are injured in the future.

The athletes perceived that they grew personally as a result of **learning patience and perseverance** and a **sense of better physical awareness** from their injury experiences. This reflected the idea that when people are exposed to a new, foreign experience(s) such as a serious injury they must somehow incorporate this experience(s) into their life stories and make sense of them (Seidman, 1991). Essentially, these athletes were faced with injuries that were very serious and they made sense of them by asking themselves what they learned from the injuries. Essentially, this represented the successful incorporation of their injury experiences into their life story narratives (Seidman, 1991).

Many of the athletes stressed the **importance of committing to the therapy programmes** during injury experiences. As well, the athletes believed that in an injury experience, one should **be patient** in the injury recovery process and should therefore **not return to competition too soon.** Some of these athletes learned this after they **attempted to comeback too soon** and thus **prolonged their recoveries** from their injuries. As one athlete stated, **"recovery is a long process but well worth it."**

In addition, some athletes learned the **importance of not letting the injury get them down** and thus the **value of remaining positive.** They felt that by remaining positive, they tended to **try harder** and **persevere** during the

rehabilitation process. Finally, many of the athletes stated that they **would participate in athletics again** even if they knew they were going to experience a serious sports injury. They felt athletics **made them a better person** and as one athlete stated **"you learn ambition, drive, focus, and not to take anything for granted"** not only through competitions but through a serious sports injury and the rehabilitation as well. Some of these athletes enjoyed the **experiences they had through athletics** such as the travel and the friends they met. This incorporated the idea of perseverance because the athletes recognized the value of persevering as uninjured athletes and thus the value of persevering as an injured athlete in order to be able to compete again and subsequently obtain some of the above mentioned benefits.

These athletes also experienced growth on a personal level because they **learned to have a better physical self-awareness** as a result of their serious injuries. Some of the athletes learned and would advise other athletes **to listen to your body** because your **body tells you things** on a purely physical level. For example, after an athlete's serious injury, she has learned that if a certain part of her back hurts her then she must stop that action which is causing the pain. It followed that many of these athletes also learned that when they feel pain and are injured, they **must get off the injury as early as possible** and **get the injury diagnosed.** In their injury experiences, they felt that they **waited too**

long to stop competing which progressed the injury into a more debilitating state. As one athlete said **"don't play hurt because it's not worth it and may be hazardous to your health."**

The final way in which these athletes' physical self-awareness was bolstered occurred through each athlete's specific injury experience and thus each athlete became aware of different physical aspects. For example, one athlete realized after his injury that **"there is a fine ratio between training and rest"** and that in training the most important thing **"is quality and not quantity."** Many athletes learned to **wait until their injuries were healed** as reflected by one athlete's comment of learning **"to put aside stubbornness and take the time to heal."** A few other athletes have learned to **warm-up and stretch properly.** Regardless of the specifics that each athlete learned, all of the athletes learned to become more aware of their bodies and the messages inscripted within their bodily messages such as feelings of pain.

It was clear that the athletes experienced personal growth as a result of their injury experiences. The athletes incorporated some valuable meanings derived from their injury experiences into their life story and viewed at least some part of their experiences as being positive. The athletes identified the learning of patience and perseverance and a better physical self-awareness as the main lessons derived from their injury experiences.

Thus, the athletes had come full circle in their injury experiences. Pre-injury, they were highly confident individuals who felt in control of their athletic self. During the early parts of their injuries, they attributed most of their positive feelings and experiences to external sources and most of their negative feelings and experiences to internal sources. During this time period, the athletes' self-concept deteriorated and they felt a lack of control and responsibility over their injury experiences. However, once the athletes accepted their injuries and possible lasting consequences their attribution patterns changed. They began to take a more internally directed attitude toward recovery which boosted their self-concept. This was reflected by their determined coping and asking of what was learned through their experiences. Thus, even though the athletes were not physically cured, they had come full circle in that they ended up where they started; they viewed themselves as athletes who were in control of their bodies and the situation.

These changes from both external and internal attributes in the early and middle parts of their injury experiences to mainly internal attributes later in their experiences had important impacts on the athletes. According to attribution theory, those people who make internal attributions experience beneficial effects on their behaviour, expectations, and emotions (Cratty, 1989; Gill, 1986). People exert greater effort, persistence, and assume more responsibility if they

perceive the attributes as being internal, which ultimately results in better results (Gill, 1986).

Later in their experiences, the athletes assumed greater responsibility of their injuries as evidenced not only by their injury acceptance and determination to get better but also by identifying what was learned from their experiences. In all cases, the athletes' determination to heal was never fully achieved on physical levels in which they were pain free. However, the athletes did not despair at this and, in the end, by internally attributing and thus taking personal responsibility for their feelings and experiences, they perceived that some amount of learning and subsequent personal growth had occurred. As time progressed in their injury experiences, the athletes were intent upon taking control of their injuries and successfully did this by learning from them and thereby not focusing on all of the negatives of their experiences; they seemed satisfied and convinced that by doing so, they finally had control over their injuries.

Practical Applications

Through this study, it was evident that an athlete is affected not only physically by an injury. Rather, the injury has an impact on her/his overall being and wellness. Thus, as a health care professional it is important to treat the athlete accordingly. By doing so, attention must be focused on not only treating the physical injury effects but also on

how the injury is affecting the athlete's overall health. The overall effects of an injury on an athlete can be best determined by taking the time to speak with the athlete on an individual, personal level throughout her/his injury experience. In this way, the health care professional will better understand each athlete on an individual level which is very important because both similarities and differences in how an injury affects each person exist. It is important to determine all of these individual effects in order to facilitate healing on a whole level. No longer can a health care professional be focused only on the purely physical aspect to an injured athlete. Rather, the professional must be aware and treat the effect of the injury on the athlete's entire being.

The findings in this study can also be applied to the athletes themselves. Through educational programmes, it must be stressed to an athlete that she/he will experience a roller coaster of feelings and experiences in an injury experience that will affect her/him not only physically but emotionally as well. The athlete must understand that some common and some unique feelings, experiences, and changes in self-concept will occur throughout her/his injury experience and that it is normal to be affected by an injury to such a great extent.

As well, the athlete must be educated to take responsibility over her/his recovery experience in the very beginnings of her/his injury experience by sharing her/his

thoughts and feelings with health care professionals, coaches, friends, and family. By doing so, these people will not only better understand what the athlete is going through in her/his injury experience, but they will also be able to help the athlete deal with the overall effects of the injury on the athlete. As well, the athlete herself/himself will develop a more positive attitude toward her/his body, injury, and role in rehabilitation. By taking increased responsibility over her/his healing, the impact of an injury on the athlete's overall wellness will be kept at a minimum.

Future Research Possibilities

Recently, many advances have been made in the knowledge of the physical, psychological, and social effects of injuries on athletes. However, future research should be directed toward examining assumptions present in the existing literature and the possible identification of new variables that affect athletes' overall injury experiences due to the relatively new research into this area. Also, the effects of an injury across all age and competition levels must be studied in order to determine if a representative model of injury experience can be developed.

The effects of an injury education programme on athletes' subsequent experiences of an injury needs to be examined. The consequences of such a programme must be studied in order to determine if athletes' injury experiences are less traumatic

when they are educated about what to generally expect throughout their injuries. Furthermore, any relationships between the athletes' injury experiences to existing psychological theories must be determined. The existing literature has identified many post-injury responses but a minimal amount of the findings have been interpreted with respect to any existing or new theories which may improve the understanding of the findings. As well, the value of therapeutic intervention programmes which focus on treating the overall effects of injuries on athletes' health must be studied. This must be done in order to determine if these athletes' rates of recoveries are different than those recovery rates of athletes who receive traditional physical therapy only. A new approach to rehabilitation programmes which treat more than just the physical injuries of athletes may be found to be beneficial and thus implemented in therapeutic settings.

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Appendices

Appendix A

Informed consent form

The purpose of this study is to examine the injury experiences of athletes. The athletes will have been initially injured at least 365 days before the day this study is conducted.

Your participation is this study is completely voluntary and can be terminated at any point in the process. There is no monetary reward for your participation in this study. If you have any other questions concerning this study you may contact the Office of Research Studies at the University of Windsor. The phone number of the Office of Research Studies is (519)973-7032.

This study will involve a 120 minute interview between you, the athlete, and an interviewer. In this interview, you will be asked questions regarding your life history up to the time of the injury. As well, you will be asked questions about your injury experience. You do not have to answer any questions during the interview if you do not wish to for any reason(s) that you do not have to provide to the interviewer. In addition, the interview will be taped on a cassette recorder. However, if you do not wish to have parts or all of the interview taped, then the recorder will be turned off.

All information that is provided will be held in strict confidence. In most cases, the interviewer will be the only person who will listen to the cassette recorded interview and

who will review the entire written interview notes. However, some cassette recorded interviews will be listened to by Dr. John Corlett of the Faculty of Human Kinetics at the University of Windsor. The participant will be informed if this is indeed the case, and can deny that Dr. Corlett listen to the interview for any reason(s). In addition, some parts of the written interview notes will be discussed with Dr. John Corlett. As well, some aspects of the interview will be discussed with the other two committee members from the University of Windsor: Dr. Patti Weir from the Faculty of Human Kinetics and Dr. Kaye Fawdry from the Department of Nursing. In addition, any information that may identify you will not be made available in the write-up of this study or to any inquires regarding this study.

Any information that you provide will be made accessible to you at any time. If you wish to see a final copy of the results of this study, please fill out the address section at the bottom of this page.

I have read the above information and understand the purpose and methods of this study. I agree to participate and I am aware that I may withdraw my consent to participate at any time.

Signature _____

Address Section

Name:

Street:

City:

Province:

Postal Code:

Appendix B

Participant summaries

Subject #: 1
Sex: Female
Injury age: 1) 19 -- 5 years ago.
2) 23 -- less than one year ago.
Age when interviewed: 24
Sport played at injury time: Basketball
Level of play when injured: 1) University basketball -- 2nd year of eligibility.
2) University basketball -- 5th year of eligibility.
Level of play when interviewed: Not playing University basketball because she has graduated and has used up all of her 5 years of eligibility.
Level of play ultimately achieved: University basketball -- 5 years.
Description of injury: 1) Torn ACL in knee which required reconstructive surgery.
2) Torn cartilage in same knee which required a scope.
Amount of time taken off: 1) 7 months off completely until she was able to play basketball again.
2) took about 6 weeks off -- during this time period she could bike, but not train for basketball.

Subject #: 2
Sex: Female
Injury age: 1) 19 -- 7 years ago.
2) 20 -- 6 years ago.
3) 25 -- less than 1 year ago.
Age when interviewed: 26
Sport played at injury time: Basketball
Level of play when injured: 1) University basketball -- 2nd year of eligibility.
2) University basketball -- 3rd year of eligibility.
3) University basketball -- 5th year of eligibility.
Level of play when interviewed: She was not participating in any competitive sports because she had used up her University eligibility.
Level of play ultimately achieved: University basketball -- 5 years.

Description of injury: 1) Torn cartilage in knee and slight tear of ACL -- had scope done to repair the cartilage and the ACL was not reconstructed.
2) Complete tear of the same ACL and she had reconstructive surgery.
3) Torn cartilage in same knee.

Amount of time taken off: 1) 7 months completely off.
2) Tore ACL in September and played entire basketball season on and off. -- could play in some games and not others.
3) Took 6 weeks off of basketball, but could bike.

Subject #: 3
Sex: Female
Injury age: 24 -- 4 years ago.
Age when interviewed: 28
Sport played at injury time: Basketball
Level of play when injured: University basketball -- 5th year of eligibility.
Level of play when interviewed: Not competitively participating because she used up all of her University eligibility.
Level of play ultimately achieved: University basketball -- 5 years.
Description of injury: Separated right shoulder (shooting arm).
Amount of time taken off: Took 4 weeks off completely, but it took 3 months for her not to be physically effected to a large degree by the injury (ie. could shoot fairly well again).

Subject #: 4
Sex: Female
Injury age: 1) 18 - 3 years ago.
2) 19 -- 2 years ago.
Age when interviewed: 21
Sport played at injury time: 1) Track and field.
2) Track and field.
Level of play when injured: 1) Competing in Senior National Track and Field Championship and entering into 1st year University track.
2) Entering 2nd year University track.

Level of play when interviewed: Entering 2nd year University basketball, but her 4th year of University eligibility because she participated in University track for 2 previous years.
Level of play ultimately achieved: University track for 2 years and entering 2nd year University basketball.
Description of injury: 1) Stress fracture in left foot.
2) Stress fracture in right foot.
Amount of time taken off: 1) Took 6 weeks off completely and was then able to do pool workouts. She was able to do a full track workout 3 months after the injury.
2) Took 5 weeks off completely.

Subject #: 5
Sex: Female
Injury age: 19 -- 4 years ago.
Age when interviewed: 24
Sport played at injury time: Volleyball
Level of play when injured: Senior A volleyball
Level of play when interviewed: Competing in local soccer league, but on no University teams because she is done her education.
Level of play ultimately achieved: Played 1 year University volleyball and then 2 years of University soccer.
Description of injury: Broken left tibia and ankle ligament damage.
Amount of time taken off: In cast for 6 weeks and started playing University volleyball 9 weeks after initial injury. She was very slow and eventually took another 7 months off due to her injury.

Subject #: 6
Sex: Male
Injury age: 1) 19 -- 4 years ago.
2) 20 -- 3 years ago.
Age when interviewed: 23
Sport played at injury time: Cycling
Level of play when injured: 1) Cyclist on Provincial Team and in Canada Cup events.
2) Same as above.
Level of play when interviewed: Not cycling due to educational demands.

Level of play ultimately achieved: Cyclist on Provincial Team and in Canada Cup events.
Description of injury: 1) Strained piriformis.
2) Herniated disk which required surgery.
Amount of time taken off: 1) Took 4 months off completely and 5 months after initial injury he was pain free.
2) Took 11 months off completely.

Subject #: 7
Sex: Female
Injury age: 19 -- 3 years ago.
Age when interviewed: 22
Sport played at injury time: Track and field
Level of play when injured: University track and field -- 1st year of eligibility.
Level of play when interviewed: Entering into 4th year University track and field.
Level of play ultimately achieved: Entering 4th year University track and field.
Description of injury: 5 stress fractures in distal right tibia.
Amount of time taken off: Took one week off completely, then did 4 weeks of pool workouts. She started running 6 weeks after initial diagnosis.

Subject #: 8
Sex: Male
Injury age: 1) 20 -- 2 years ago.
2) 21 -- 1 year ago.
3) 22 -- current year.
Age when interviewed: 22
Sport played at injury time: Track and field
Level of play when injured: 1) University track and field -- 1st year of eligibility.
2) University track and field -- 2nd year of eligibility.
3) University track and field -- 3rd year of eligibility.
Level of play when interviewed: Entering 4th year University track and field.
Level of play ultimately achieved: Entering 4th year University track and field.
Description of injury: 1) Stress fracture in distal left tibia.
2) Torn hamstring near gluteals.
3) Stress fracture in distal right tibia.

Amount of time taken off: 1) Took 6 weeks off of track, but was able to do pool workouts.
2) Was competing on and off for 3 months.
3) Has taken 3 months off completely and is currently not participating.

Subject #: 9
Sex: Female
Injury age: 1) 21 -- 8 years ago.
2) 22 -- 7 years ago.
3) 23 -- 6 years ago.
Age when interviewed: 29
Sport played at injury time: Basketball
Level of play when injured: 1) University basketball -- 3rd year of eligibility.
2) University basketball -- 4th year of eligibility.
3) University basketball -- 5th year of eligibility.
Level of play when interviewed: Not participating in basketball because she is done University and working full-time.
Level of play ultimately achieved: University basketball -- 5 years.
Description of injury: 1) Shin splints in both legs which lead to anterior fasciotomies in both legs.
2) Shin splints in both legs which lead to posterior fasciotomies in both legs.
3) Partially torn ACL in left knee which did not require surgery.
- she just had knee surgery to alleviate problems which stemmed from this injury.
Amount of time taken off: 1) Two months off completely.
2) Two months off completely.
3) Two and a half months off completely.

Subject #10: Not used in study because she did not fit in the serious sport injury criteria. This was not discovered until the interview was underway.

Subject #: 11
Sex: Female
Injury age: 17 when first felt pain -- 5 years ago.
Age when interviewed: 22
Sport played at injury time: Track and field

Level of play when injured: When she was 17, she was competing on a Club team and ran on the Provincial team. However, she was forced to quit after 1 year of University track and field.
Level of play when interviewed: Not participating in track and field due to her injury.
Level of play ultimately achieved: Forced to quit after 1 year of University track and field.
Description of injury: The exact injury was never known for certain, but the most recent diagnosis was that of a rotated pelvis with accompanying nerve damage.
Amount of time taken off: Varies throughout her injury experience, but the longest was 5 months until she was forced to quit due to her injury.

Subject #: 12
Sex: Male
Injury age: Initial problems started when he was 16 -- 7 years ago.
Age when interviewed: 23
Sport played at injury time: Swimming
Level of play when injured: Competing in Youth Nationals.
Level of play when interviewed: Not swimming competitively because he used all of his University eligibility, but is planning on training again in order to participate in swimming events.
Level of play ultimately achieved: University swimming -- 5 years.
Description of injury: Low back pain diagnosed originally as a pelvic tilt and then muscle tears.
Amount of time taken off: Varies -- 3 weeks off completely, 3 weeks off completely, and 6 weeks off completely.

Subject #: 13
Sex: Male
Injury age: 18 -- 3 years ago.
Age when interviewed: 21
Sport played at injury time: Soccer
Level of play when injured: Club soccer and entering 1st year University soccer.
Level of play when interviewed: Playing in Canadian National Soccer League and entering into 3rd year University

soccer.
Level of play ultimately achieved: Canadian National Soccer League and entering 3rd year University soccer.
Description of injury: Torn right groin muscles.
Amount of time taken off: Unable to play soccer for 6 months, but was able to run slowly and lift weights. He took an additional 6 months off after playing summer soccer.

Subject #: 14
Sex: Female
Injury age: 22 -- 2 years ago.
Age when interviewed: 24
Sport played at injury time: Track and field
Level of play when injured: University track and field -- 3rd year of eligibility.
Level of play when interviewed: Not participating mainly due to work commitments. She was thinking of resuming her training.
Level of play ultimately achieved: University track and field -- 4 years.
Description of injury: Right foot injury that Doctors have not been able to diagnose.
Amount of time taken off: Took 2 months off completely and effected physically by the injury for 1 year until she quit track and field due to various factors including the injury.

Subject #: 15
Sex: Male
Injury age: 18 -- 2 years ago.
Age when interviewed: 20
Sport played at injury time: Soccer
Level of play when injured: 18 and under travel soccer.
Level of play when interviewed: Participant in a semi-professional soccer league.
Level of play ultimately achieved: Current participant in semi-professional soccer league.
Description of injury: Complete break of left lateral malleolus which required a cast.
Amount of time taken off: Took 5 months off completely and then could run somewhat. He started playing soccer 7 months after initial injury.

Subject #: 16
Sex: Female
Injury age: 25 -- 2 years ago.
Age when interviewed: 27
Sport played at injury time: Basketball
Level of play when injured: University basketball -- 4th year of eligibility.
Level of play when interviewed: Not playing basketball because she is done her schooling and is working full-time.
Level of play ultimately achieved: University basketball -- 4 years.
Description of injury: Torn lateral and medial ligaments of right ankle.
Amount of time taken off: Took 6 weeks off completely and was never able to regain her preinjury performance for the rest of the season (2 more months after returning to play).

Appendix C

Initial in-depth interview questions

A) LIFE HISTORY SECTION

1) Assume I do not know you at all. Tell me about yourself beginning with as far back as you can remember.

2) Tell me about your athletic experiences from as far back as you can remember until the time you were injured.

B) OBJECTIVE AND SUBJECTIVE QUESTIONS

1) Current age.

2) Year injury occurred and age of athlete at this time.

3) Level of competition when injury occurred.

4) How would you describe your quality of playing performance at this time?

5) Assume I know nothing about your injury. How did the injury occur?

6) Explain to me the medical history of your injury in as much detail as possible.

7) How long were you unable to practice and/or compete in your sport?

8) Tell me about your relationships with health care professionals.
- give consistent examples of health care professionals
- explain to me how you felt during the medical treatment of your injury (addresses control hopefully)
- probe question regarding clinical depression
- how long or still seeking health care help

9) What role did your coaches, teammates, family, and friends play in your injury experience? (social support)

10) Whose role do you remember the best? Why?

11) Did your injury prevent you from returning to your pre-injury level of competitive performance?
- if it did, then how come (ie. lack of eligibility, injury itself, etc.)

11b) Has your injury prevented you from attaining higher levels of competitive performance?
- if so, then how come (ie. lack of eligibility, injury itself, etc.)

12) Does the injury still cause you pain or discomfort now?
- under what circumstances?

13) Given what you have said in the interview, how do you see the injury affecting you in the future?

14) What advice would you give an athlete with the same injury problem that you had?

15) Is there anything you would like to tell me about sports injuries that we haven't talked about?

Appendix D

Initial groupings of interview questions

1) Personal History

   - Part A --> #1, 2

   - Part B --> #1, 2, 3, 4

2) Injury History and Experience

   - Part B --> #5, 6, & 7.

3) Health Care and Social Support

   - Part B --> #8, 9, 10

4) Injury Aftermath

   - Part B --> #11, 12, 13

5) Follow-up Section and Validity Check

   - Part B --> #14, 15

Appendix E

Final in-depth interview questions

PART A -- LIFE HISTORY SECTION

1) Assume I do not know you at all. Tell me about yourself ie. about your family, where you grew up, and what kind of sports you played growing up.

PART B -- INJURY EXPERIENCE

1) Current age.

2) What was your injury diagnosed as?

3) Injury age.

4) Injury competition level.

5) Highest level of competition reached.

6) Current participation status.

7) Did you have any previous serious sports injuries?

8) Tell me about your sport successes up to the time you were injured.
- how do you feel you were performing shortly before you were hurt?

9) Tell me about your injury experience, starting with how the injury happened.
- included in this section was appropriate probes regarding health care and social support, important positive and negative roles, etc. However, the order these questions occurred in each interview varied depending on how each athlete recounted her/his injury experience.

10) Did your injury prevent you from returning to your pre-injury level of competitive performance? (if it did, then how come -- lack of eligibility, injury itself, etc.)

10b) Has your injury prevented you from attaining higher levels of competitive performance? If so, then how come (ie. lack of eligibility, injury itself, etc.)

11) Does the injury still bother you now? If so, then under what circumstances?

12) How do you see the injury affecting you in the future?

13) What advice would you give an athlete with the same injury problem that you had?

13b) What would you have done differently looking back on your injury experience?

14) Is there anything else you would like to talk about with respect to serious sports injuries?

Appendix F

Final groupings of interview questions

1) Personal History

   - Part A --> #1

   - Part B --> #1, 5, 6, 8

2) Injury History and Experience

   - Part B --> #2, 3, 4, 7, 9

3) Health Care and Social Support

   - Part B --> #9 (by asking probe questions)

4) Injury Aftermath

   - Part B --> #10, 11, 12

5) Follow-up Section and Validity Check

   - Part B --> # 13, 14

Appendix G

Derivation of injury diagnosis, physical fears and adaptations, and the role of health care professionals first and second order themes

Raw themes	1st order	2nd order
1) misdiagnose injury 2) -ve-->hcp not knowing what inj. was 3) -ve-->hcp not bel. Dr.'s diagnosis	Injury uncertainty	Injury diagnosis
4) feel.--> inj. diagnosis finally	Feel. --> inj. diag. finally	
5) reinj. fear & adaptation 6) future physical fears 7) adaptations to adaptations post-inj. pain	Physical fears & adaptations	
8) +ve-->hcp help athlete 9) +ve-->hcp reputation 10) inj. education 11) -ve--> not comfy 12) -ve-->hcp unprof. behaviour	Role of hcp.	

Appendix H

Interview notes for injury diagnosis, phsyical fears and adaptations, and the role of health care professionals first and second order themes

1) Injury diagnosis

1a) Injury uncertainty

- -ve roles --> misdiagnosing injury
  - angry at other U. therapist for misdiag. knee injury as a sprain (reality --> ACL)
  - didn't like U. therapist because she heard he had misdiag. injs.
  - when U. Dr. diag. stress fracture he was bitter at U. therapist who diag. inj. as soft tissue damage --> "You have to trust in a therapist and I don't trust her"
  - didn't see chiropractor after hurting back again because chiro. lied to him about his inj. 1st time --> wanted chiro. to tell him the truth and when he didn't, ath. saw this as a racket --> scam artist and ath. could do manip. on his own
  - -ve--> ER Dr. who told him he would need pin for ankle and wouldn't be able to run for 3 years --> "he jumped the gun and made me feel fears that I should have never felt"

- -ve roles --> hcp not knowing what inj. was & not bel. Dr.'s diag.
  - U. ath. ther. who admitted she wasn't sure what inj. was and asked too many questions
  - frust. because U. ath. ther. was ?ing her if her foot really hurt despite a Dr.'s stress fracture diagnosis
  - upset cuz U. ther. tried to tell her that inj. wasn't same as Dr. diagnosed
  - upset cuz U. ther. tried to change reasons for why she hurt her foot
  - -ve ortho. sur. who never diag. inj. and left her in the dark about it
  - didn't like anyone asking her about foot inj. cuz it wasn't diag. and she didn't know tmt. plan
  - embarrassed using crutches because she wouldn't know what to say to people about her undiag. inj.
  - up until hip inj. was diag., he didn't think he would be back cycling
  - frustrated due to undiag. hip inj. and had sliding results and could see his goals slipping away
  - every time he went to a Dr. he was desperate and hoping that each Dr. would find cause of pain
  - became disillusioned with undiag. inj.
  - frust. with orthos. who couldn't diag. inj.
  - "one of the worst things is not knowing what the inj. is"

- it really bothers her that her ankle inj. wasn't diag.
- bone scan was -ve --> was relieved but thinking that there is still something wrong with the ankle
- "it's tough not to know" what the inj. is
- in 4th year U. and inj. wasn't diag. --> angry and turned this anger into deter. to compete

1b) Feelings about having inj. diag. finally

- once you know what inj. is, then rehab starts and you are on the road to recovery
- was relieved when inj. was diag. as a definite stress fracture cuz he knew what inj. was
- when ham. inj. was finally diag., he thought "See, I am really hurt"
- went home and physio diag. inj. as rotated pelvis and perm. nerve dam. --> why did it take 3 yrs. for inj. to be diag. and why didn't anyone figure it our b4
- once she found out she had stress fracture, she was thinking that she had to get down to business to get inj. better
- when pain specialist diag. inj --> validated his concerns & thoughts that pain was real
- relieved cuz Dr. was finally able to palpate area and diag. inj.
- when people asked him about inj. it was nice to tell them that he had a strained muscle (something concrete)

2) Physical fears & adaptations

- fear of reinjury & adaptation
- 1st sp. after scope was soccer & she was worried she wold reinjure her knee
- 1st yr. back from ACL surgery, she thought about knee b4 every game and some practices
- frust. that she kept worrying about ankle inj.
- worried about stress fract. reinj. the rest of the U season
- was diff. to put torn ham. out of this mind cuz it still phy. bothered him
- he was a bit worried that his low back inj. would come back
- scared of reinj. for the entire summer soccer following initial inj.
- "I don't go full out with anything" --> fear of putting too much pressure on it at once (ankle)
- worried about reinj. after coming back from ankle inj.
- knew she should play bball again after ACL recon. after she could play and do things well again
- confidence in knee inc. after 3rd inj. when she felt a pop in her knee but it was okay
- didn't think abut inj. when she could do a workout and not think about inj.

- began to worry less about ankle reinj. as vball season progressed cuz she was getting more aggressive and confident
- when she could jump & land of both feet she grew more confident in ankle
- proved that he overcame strained piriformis when he cycled and beat the guy who replaced him and won gold in the Canada Cup
- indicated that he was over his inj. when he returned to track after stress fracture and won bronze at CIAUs
- after he felt no pain from his stress fracture, he didn't look back and worry about it
- 1st time she drove into lane after straining ACL scared the hell out of her but this proved that her leg was strong and she wasn't worried about reinj. after this
- liked wearing a knee brace cuz she wasn't afraid of reinj.
- now he doesn't think about his back inj. but he does everything to prevent it
- knew he was over his groin inj. cuz he could play soccer at a level he knew he always could
- worried about reinj. at first but overcame this fear by warming up properly due to a sports Dr. recommendations and his own past exp.
- after taking 2 yr. off completely she isn't worried about ankle inj. --> thinks it is healed now
- doesn't think he will ever get over his fear of reinj. cuz his ankle still hurts him a lot & is always reminded of inj.
- will get over fear of reinj. when she feels ankle is strong enough

- seeing surg. as quick fix
- wanted surg. & not to be just casted cuz "they would have fixed it" --> "It would have been more efficient if they fix it right away"
- when Dr. told her she would need ant. fasc. in both legs, she was relieved cuz she felt the surg. would make the pain go away
- When Dr. told her she partially tore ACL, she rationalized this --> bet the scope, fix it, and she can play her last yr. of U bball
- wanted surg. for hern. disk cuz he viewed surg. as an instant cure --> Dr. will fix it and he'll be better right away

- future phy. fears
- has nightmare that when she gets older she won't be able to do athl. things
- worried about how her knee will be when she gets old (maybe prob. walking)
- it scares her that she is so young and her ankle hurts so much

- she is too young to have to worry about her ankle on a daily basis
- feels he will have to quit soccer in 3 yrs. cuz ankle will tire before any other part of body or mind --> frust. and annoyed

- adapt. to post-inj. pain
- he has had achiness for 4 yrs. and knows pain is going to be there
- has adapted to spr. ankle --> give her an ice pack and she'll be okay
- used to knee probs. of swelling and soreness

3) Role of hcp

- +ve role --> hcp help ath. heal
- surg. saved her life by doing procedures that allowed her to cont. to play bball
- U. ther was good cuz therapy was helping cuz his back was feeling better
- liked therapist cuz therapy paid off & she was recovering from separated shoulder quickly
- U. ther. was good cuz she knew what exercises to give her to get should. better
- orthos. were good cuz they brought him from a pt. of not functioning to funct.

- +ve role --> hcp rep.
- went to see massage ther. and dropped his trust in ther. cuz he heard the ther. was good
- had orthotics made by a person who had a good rep.
- went to see U prof. cuz he heard this prof had helped other aths.
- liked Dr. --> good rep. within school community
- got knee scoped by same Dr. who did her ACL rec. cuz he had good rep.
- wanted her knee scoped at home cuz the Dr. was a friend of the family
- needed post. fasc. & went to Dr. that had vast exp. doing these surg. -> also read his published articles & she felt comfy with him
- went to see chiro. that he had previously seen
- liked U ther. cuz she had helped ath. get over previous inj.
- went to same Dr. to get knee scoped a 2nd time due to his past success on her knee
- wanted to go home after hurting knee cuz she wasn't familiar with Dr. & ther. is U area & wanted to go home to see same Dr. who scoped her knee the year b4
- massage ther. who helped him overcome torn ham. is the 1st person he sees with physical probs.

- inj. ed.
    - +ve U ther. explained the best out of anybody
    - felt better about inj. cuz Dr. gave her details about surg. and took time to explain
    - advice -- get a good Dr. who explains and you feel comfy with
    - liked all of the Drs. who ed. her about inj.
    - +ve -- physio. cuz she exp. things well
    - he didn't like it when Dr. showed him inj. on skeleton cuz it showed him that the was actually inj.
    - she didn't think hcp would exp. things to ther if she didn't know what ?s to ask due to her education and previous knee inj.
    - fell good about scope cuz Dr. expl. instrument & procedure
    - got to play with plastic ACL the night b4 the ACL surg. and like this cuz she got acquainted with it
    - -ve -- U thers. who didn't inform her
    - was afraid of scope cuz Dr. didn't explain to her what a scope was and what possible ACL damage meant
    - didn't understand what she did to her knee cuz she didn't understand U ther. terminology
    - ER Dr. didn't exp. to her what a sep. shoulder meant
    - felt Dr. should have told him more about disk surg.
    - knew ankle was going to take a long time to heal cuz ER Dr. gave her a pamphlet about her inj.
    - ther. was good cuz he always exp. why she was doing the ther. and why it was helping
    - glad ortho. showed and exp. the ankle fracture & bone chip cuz she then knew exactly what inj. was
    - he like it when ER Dr. showed him the x-rays of the broken ankle cuz "I knew exactly what I did"
    - she felt that although they were busy, they could have taken the time to expl. what she fractured and why she needed a cast
    - +ve -- U ther -- nice and exp. therapy programme to her
    - Dr. exp. surg and inj. really well

- -ve --> not comfy
    - she didn't like knee tests cuz she didn't have any confidence in student trainers who were doing them
    - was thinking all ther. are pathetic or she got stuck with the bad ones
    - didn't see hcp. after hurting back a 2nd time cuz he wasn't interested in anything they had to say or do, didn't have a lot of faith in them
    - he didn't like going to chiro. cuz he didn't believe in tmts. and thought chiro. are for old people
    - saw U ther. but didn't trust her cuz ther. was doing "weird" assessments
    - she didn't like going to physio after scope cuz she felt that she could do it on her own

- stopped seeing U ther. cuz he dealt with good people b4 and ther. was not like them
- stopped seeing U ther because clinic, ther., city were new to him and he never felt comfy
- didn't like chiro. because he was impersonable

- -ve --> hcp unprof. beh.
- never go back to U ther again cuz she told him pain was all in his head --> didn't trust her after this and felt like an arrow had been stuck in his heart
- lost faith in medical people cuz they didn't believe she was inj.
- when spinal x-ray was -ve --> Dr. asked her if she wanted to quit track and was therefore making up this inj.
- didn't like U ther. cuz ther. didn't seem to respect her and made comments about her physical appearance
- mad at U ther. who told her she had a low threshold for pain
- pissed off at U ther. who called him a wimp and pain was all in his head after pulling ham. a second time
- U ther. was a jerk cuz he didn't care about you unless you were a men's bball player, then you got special tmt. and att.

Appendix I

Derivation of affective domain and cognitive domain responses second order themes

Raw themes	1st order	2nd order
1) distress over taking time off or quitting 2) Want to participate but can't	Anxiety	Affective domain responses
3) anger 4) anger with self	Anger	
5) depression	Depression	
6) guilt	Guilt	
7) alone or isolation feelings 8) feel. part of team	Isolation	
9) denial 10) hoping inj. wasn't serious 11) depersonalization	Denial	
12) catastrophizing thoughts 13) selective abstr. 14) dichotomous thinking	Cognitive distortions	Cognitive domain responses
15) timeliness	Incompleteness feelings	
16) realize that inj. was serious 17) inj. acceptance	Acceptance & resignation	
18) deter. cope 19) prove to self & others--> ath. can play again	Determined coping	

Appendix J

Interview notes for affective and cognitive domain responses second order themes

1) Affective domain responses

1a) Anxiety

- distress over taking time off
  - after quitting sport due to back inj. she was jealous of the other aths. & wished she was them
  - hard time accepting fact she couldn't play bball for 1 yr. after ACL surgery
  - he asked ER Dr. if he could still swim & when Dr. said no, he felt a lump in his throat
  - sat out U soccer season --> became involved in other things to keep his mind off of not playing & left his shoes at home cuz he didn't want to be tempted to return to play soccer that yr.
  - upset and heart dropped when ER Dr. told him that lat. malleolus had broken totally away cuz he was going to miss playoffs
  - frust. cuz nagging pain forced him to take time off from cycling
  - upset after turning ankle cuz she knew she would have to take some time off of vball
  - ankle inj. got to pt. where she could barely walk on it and "I was upset"
  - when U Dr. diag. stress fracture, he was upset cuz his conditioning would decrease
  - upset with herself cuz she wanted to run & due to inj., she couldn't
  - felt horrible when she watched teammates play & she couldn't due to knee inj.
  - when told he would be in a cast for 3 weeks, she thought "I won't be able to train"
  - she was upset when Dr. said she couldn't play bball for a few weeks due to should. sep.
  - upset that she hurt knee and be off 6 months cuz she was having a good year and meeting goals

- wanting to play the sport but can't
  - frust. & disappointed during stress fractures cuz track had been a part of her life fro so long and now she couldn't do it
  - "It takes a lot out of you"; "I found it pretty tiresome because when you want to do something & can't, it takes a toll on you psychologically"
  - couldn't participate fully in practices was frust. cuz "you really like it & you can't do it"
  - track and field was very important to him & "when you

have to take a back seat, it's not easy"

- wanting to participate but can't

1b) Anger
- when teammate tried to enc. her about her inj. she became mad at him & asked him "what the hell do you know about injuries?"
- was mad when shins started hurting cuz she was in her 1st yr. U. track & was looking fwd. to a good season

- anger with self
    - decided she hurt knee cuz she lifted leg wts. the wrong way b4 inj. and tr. also said inj. was her fault --> mad at self
    - angry at herself cuz she can't physically get over her fractured ankle
    - "Boy was I dumb back then" since he lost his temper & broke ankle as a result of retaliation in a soccer game --> "mad at myself" since he let re. & other team get him so mad that he went after an opposition player
    - he blamed himself for inj. cuz he didn't hurt himself through training, but by showing off in another type of competition
    - she believes back inj. was due to her being young & stupid cuz she didn't warm-up & down
    - pissed off at herself cuz she should have put foot down when inj. 1st started & got it diag.
    - right after recent surgery, she was angry at herself for going through with surg. cuz she was in intense pain
    - blames herself for recent knee surg. --> she should have dept it stronger by doing wts.
    - during stress fracture he ?ed what he did to let the inj. get to the pt. it was
    - she blames herself for her stress fractures cuz she should have told someone about the inj. earlier
    - hurt knee 3rd time doing same bball move that she did when she inj. her knee the 1st time --> mad & blamed herself

- anger at someone else who inj. the ath.
    - mad at & resented two teammates who inj. her
    - mad at opponent who went under vball net & caused her to turn her ankle

1c) Depression

- hard on her mentally & depressing cuz she wasn't running well
- after quitting due to inj., she was depressed and didn't know what to do with herself
- decided not to play sports for 8 mo. cuz she wanted to give ankle a rest --> very depressing cuz she wasn't playing any

sports
- depressed about not being able to part. in bball due to ACL inj.
- felt depressed cuz she couldn't play bball for a few wks. due to inj.
- depressed over not being able to run for 6 wks. due to inj.
- didn't go through same depression with hern. disk as str. muscle cuz he felt like maybe he should be cycling with muscle inj. and with disk inj. it wasn't phy. possible to cycle
- she didn't like telling people about her ankle inj. cuz story was depressing to her
- when told he would need an ankle pin --> "I was beyond depressed"
- after getting cast on she was depressed

1d) Guilt

- she collapsed on track cuz shins hurt her too much --> felt bad cuz she though the coaches were mad at her for not saying anything about her pain b4 this pt.
- when not running well due to back pain she worried about disappointing her coaches
- "I felt like I let the whole world down" cuz she quit track for 8 months due to her inj.
- she still feels bad about quitting due to her inj. cuz she feels that she let her coach down who had high hopes for her future
- she felt she had to be there for the team after she hurt her knee
- when she told teammates she may be out 6 mo. due to knee surg., she felt like she was letting the team down
- she felt guilty when she told teammates she couldn't play rest of bball season --> felt like she let teammates down

1e) Isolation

- Feelings of being alone, loneliness, or isolation
    - "I'm all alone what am I going to do"; "I felt really alone"; "Who's going to come with me" to the hosp.
    - when ER Dr. told him that he would have to stop swimming he wanted to be left alone
    - in hosp. after turning ankle she just wanted to be left alone
    - she didn't talk to anyone about ankle inj. cuz she wanted to alone since she knew ankle would never be 100% again
    - when she hurt her knee she felt alone when she was laying on the bball court

- feelings of being part of team
    - he felt left out during ham. inj. cuz he was tr. in pool & not on track with rest of team; felt separated & began to ? if he could contr. to team

- she liked going to practices when she was hurt cuz she like being a part of everything; she wanted to feel a part of the team
- imp. that she have contact with team during knee inj. so she felt a part of the team; wanted to feel a part of the team
- frust. cuz she was having a good season & felt like a part of the team
- at beg. of 1st yr. U. track she didn't tr. due to inj. and therefore felt outcasted since she didn't get a set to teammate friends
- didn't tell anyone when shins started to hurt cuz she was in her 1st yr. U. track & wanted to get to know teammates and didn't want to take time off
- wasn't able to part. fully which was frust. cuz he wanted to meet new people and fit in since this was his 1st yr. of U. soccer
- felt left out at practices cuz she couldn't play bball due to knee recon.
- upset at practice cuz she couldn't play due to inj.
- quit summer 1993 due to undiag. ankle inj. --> hard not to be around teammates
- a hard part with her quitting for 8 mo. was she liked tr. with others
- "I had fears about being left out, but it didn't happen"
- he fit in but believes he would have fit in better if he could have part. fully in practices --> "I was lucky since I was around guys who didn't isolate me"
- although she did pool workouts & went to team meetings, she felt isolated --> "not part of inside jokes that come from track meets that I wasn't attending"
- in tr. camp, she felt isolated from teammates cuz she was in pool tr. away from track
- advice --> expect to feel like an outsider
- she wanted to quit during inj. cuz she didn't feel like a part of the team
- as she sat out longer, she felt more & more of an outsider and not a part of the team
- during an inj., she believes it's imp. to still go out socially with the team

2) Cognitive domain responses

2a) Denial

- denial
  - she kept thinking that sh. pain would go away if she layed down for bit cuz she had never had a ser. inj. b4 and assumed inj. wasn't too ser.
  - in 2nd yr. bball, shins hurt but she though pain was a minor prob. & it would go away

- her shins hurt her in her last yr. of hs. & 1st yr. U. bball but never got them checked out cuz she never though the pain was ser. enough
- didn't want to go to ER cuz he thought the back pain would go away overnight; initially back stiffened up but he didn't think the inj. was as bad as it turned out to be
- thought shins would get better over Xmas break
- when 1st feeling pain she thought it was cuz she wasn't used to tr. & this was the reason for the pain
- he heard ankle crack but "I thought I just sprained it"
- when he found his family had a history of hern. disks he though there was no way he had one cuz he was too young
- 1st feelings of back pain, he thought the just strained a muscle
- initial soreness --> thought it was cuz of overuse & just iced ankle & foot; "didn't think too much of it"; "didn't really worry about it"; as pain progressed she thought maybe she sprained it
- when he slipped during soccer game, he felt sharp pain in his groin but kept on playing cuz he thought pain would go away
- when coach told her not to untie her shoe, she thought maybe ankle was injured more ser. than she first thought, but she still didn't think she broke it cuz she never thought she would break a bone
- after getting crutches, she still tried to convince herself that she could compete in the next days events
- she didn't want to go to clinic cuz she didn't think foot inj. was sever enough despite fact Dr. at track though she had a stress fracture
- initially, when she felt foot pain she continued to high jump cuz she didn't think she was ser. inj.
- knee really hurt but she didn't want to stop cuz she didn't want to acknowledge that she hurt it that bad

- hoping inj. wasn't too serious
- after hurting knee she was hoping that she would be okay
- after feeling pain, she was hoping that nothing was wrong with knee and that she didn't tear a lig.
- he didn't want to go to ER cuz he was afraid Dr. would find something wrong
- went to U. Dr. & got a bone scan --> nervous since she didn't want a stress fracture to be found
- "I hope this isn't going to be something serious"
- he wanted to go to the hosp. to confirm that ankle wasn't broken cuz soccer playoffs were about to start & he wanted to play in them

- depersonalization
- when she heard her ankle crack & after she fell to the court, she was thinking "I can't believe this just happened"

- when told her ankle wasn't broken but she would need a cast for str. ligs., she thought "am I ever unlucky"
- inj. "was the last thing I needed on earth"
- when she found out she had stress fractures she thought "this can't be happening to me"
- "it's been one thing after another with me since high school"
- after 2nd stress fracture --> "Why me?"
- "I didn't really need injury at this time" cuz he wanted to est. himself on the U. soccer team
- after knee recon. she was wondering why the knee inj. happened to her
- she knows she can't change things but still gets frustrated cuz she thinks knee inj. should happen to others who aren't active & they won't lose so much

2b) Cognitive distortions

- catastrophizing thoughts
- after disk surg. he didn't think about cycling cuz he was in pain all of the time & thinking he would never get on a bike again
- thought his career had ended when he was taken off of the Provincial team due to bad results when he was inj.
- she didn't want ankle surg. and was thinking "Oh no, there goes the rest of the season"
- immediately after being inj., she was thinking wrt. bball career "that's it"; "that's probably the last chance I'll get"
- day of pin surgery he was nervous mostly cuz he was worried about his sports future and biggest concern was "being finished for life"
- also thinking that "done playing sports forever" on the day he found out he would need this surg.
- after pulling back he went to practice and fell to all fours --> worried about swimming future
- partially tore ACL over summer playing bball and when she fell to ground she thought she would never play again
- when she had ankle cast on she was thinking that she may never play vball again
- after turning ankle she was thinking about how she was going to be able to play vball
- thinking "what if I never play again" after inj. her sh.
- hoping she could play again cuz it was her last yr. of U. part.
- knew she was hurt & she was thinking that she may never shoot or play bball again
- thought she would never play again after she had knee recon.
- initially after hurting knee she thought she would never play bball again

- when shin was really painful he was thinking he wouldn't be able to compete in track for the season

- selective abstraction
  - after 2nd knee inj., she compared herself to teammate who had the same surg. earlier in the yr. which made her push harder
  - throughout knee inj., she compared herself to teammate who tore ACL the previous yr. --> not in as much pain therefore she bel. she didn't hurt knee as bad
  - after hurt knee 3rd time, she was scared cuz pain wasn't same as previous injs.
  - she was ignorant to ser. inj. cuz she was never ser. inj. b4 - looked at scope & inj. -vely cuz she felt like inj. was going to be bad based on bad past inj. exps.
  - was frust. cuz all previous injs. didn't take so long to heal and this one seemed to lag on
  - felt similar pain in other leg as his initial stress fracture 2 yrs. earlier
  - doubted Dr.'s diag. cuz a large # of teammates were diag. with same thing & he thought there can't be that many ath. with same inj.
  - she knew ankle would take a long time to recover cuz she was ser. inj. b4 & was aware of the length of time this took to get better
  - he knew inj. was ser. at this pt. cuz he had previous ser. sp. inj. & he recognized the assoc. pain
  - she was seeing similarities to 1st stress fracture --> ie. couldn't describe pain but recognized familiar pain
  - thinking there's something wrong with ankle based on past ser. knee inj. and knew what ser. pain felt like

- dichotomous thinking
  - she couldn't describe her pain which "made it unbelievable"
  - the -ve spinal x-ray made her think there is no phy. inj.; this also made the coaches believe she wasn't hurt
  - when U. Dr. & ortho. didn't know what exact inj. was, she was thinking that maybe inj. wasn't as bad as she thought & maybe pain is in her head
  - was thinking b4 her collapse that if its possible to make up pain
    - after collapse, she was relieved cuz she knew for sure the pain wasn't in her imagination
  - when coaches & ther. didn't think her shins were ser. inj., she began to think that pain was all in her head
    - so, she went to ortho. in the hopes that he will find something wrong with her shins & prove that pain isn't all in her head
  - she started to believe pain was phantom cuz stress fracture hadn't healed in 2.5 months which was too long for it not be healed

- she & coach began to ? why it was taking so long to heal
- when Drs. couldn't diag. hip inj., he began thinking pain was in his head

2c) Incompleteness feelings

- timeliness of inj. which resulted in feelings of incompleteness
- due to 3 ser. inj., he has never been able to prove how good he could be
- frust. that fractured ankle has prevented her from attaining higher levels of comp. perf.
- injs. didn't allow her to reach her bball dreams which made her mad; felt she wasted her U. bball career
- she wanted to play again after 2 knee injs. cuz she wanted to prove to herself that she could play again at the level she was b4 the injs.
- returned to play cuz she wanted a good bball exp. due to bitterness she felt from previous 2 injs.
- felt bad about missing some bball & not getting same chances for getting better
- she shouldn't have played so soon after 3rd knee inj. but wanted to cuz it was her last yr. of U. eligibility
- worried that her hopes & aspirations may be dashed in last yr. of U. bball due to inj.
- depressed cuz inj. wasn't getting any better & she was in her last yr. of U. eligibility
- feels bad cause inj. was in her last yr. of elig. and she didn't play as well as she knows she could have
- felt inj. effected her final bball yr. cuz she missed practices & games and therefore missed these opportunities to improve
- bball season ended on disappointing note --> "I didn't fulfill my season" due to ankle inj.
- resented disk inj. cuz it prevented him from having one last summer of racing --> was going to retire at end of summer due to school commitments
- she still hasn't accepted fact that she wont' be able to do anything competitively again cuz she is a comp. person
- this is hardest part of inj.
- "I don't want it to be over still" (ath. career) --> forced to quit due to undiag. ankle inj.
- never found out how good she could be due to knee & ankle injs. that effected her whole U. days
- "I don't want to give it up" and wasn't ready to quit
- she wants to find out how good she could be in track
- when getting bone scan, she was thinking she wasn't going to be able to compete in her 4th yr. of track and therefore not be able to see how good she could have been

2d) Acceptance and resignation

- realization that injury was serious
  - when clinic gave her crutches she thought she was hurt more severely than 1st thought
  - orthotic man showed her pressure pts. which correspond to stress fracture location which made her feel better cuz it proved she did have stress fracture
  - overcame her doubts about the extent of her inj. due to her HK ed. --> she knew she was hurt; also knew she was hurt after taking 2 weeks off & ankle still hurt --> "this thing isn't getting any better. I must have done something to it"
  - U. Dr. told her that since the inj. wasn't diag., rest would help --> "I knew I needed a rest"
  - after disk surg., he knew he wouldn't be able to cycle comp. again cuz he wouldn't be able to give that extra 2% that is needed
  - had easier time accepting fact that he couldn't cycle due to hern. disk cuz it was so organic and visible on x-rays; knew he was ser. inj.
  - when he part. in Ontarios & didn't do well, he decided to take some time off & rest his back
  - after taking ankle brace off & seeing how swollen ankle was, "I knew I broke it right away"
  - "I was sure it was a bad injury" due to cracking noise, pain amt., & dangling of foot

- injury acceptance
  - when back pain decreased but times remained slow, she realized this was a "time of passing for me"; "time to move on"
  - at Nat. Regionals, she realized that damage the comp. syndrome had done to her legs would not allow her to jump to this level cuz she was too slow and couldn't keep up with others
  - figured she was done for yr. due to inj. after racing the worst race of her life
  - "you get to a point where you have to accept it" --> occurred when she realized inj. slowed her down & would get in the way of her attaining her goal of being the 6th player
  - "thought I was back" cuz she was gradually able to play and not think about ankle when she was playing
  - "I don't know if I ever really accepted it"

2e) Determined coping

- became enc. & focused on getting better after she was able to run & get ball to hoop with inj. sh.
- didn't quit team cuz she wanted to know if she could come back from inj.
- after 8 mo. rest & return to track, she though she would do well cuz she had such a long break

- determined to make it work --> entering 4th yr. of U. track & after taking summer off due to inj.
- after finding out he would not need surg., he was thinking about healing & getting back to sports
    - "I had lots of high hopes again"; "I was beyond happy"
- she was thinking after ACL recon. that it was a lot of work but rehab would be worth it
- "I'll be back"; wasn't going to let herself be taken down by the inj. and these thoughts occurred when ER Dr. told her she would be in cast for 3 weeks
    - wanted to prove to herself & coach that she could play after the inj.
- since she had been through a previous stress fracture and this inj. was the same, she concentrated on future & knew what to expect
- 4 - 6 weeks after inj. he decided to work on getting inj. better and think about future; "more focused on getting it better"
    - he wanted to get back to performing at higher level after inj.
- 1st race back from inj., she wanted to prove to herself that she could run well
- motivated to prove to coaches that he is a better ath. than they have labelled him based on him being inj.

Appendix K

Derivation of shared social reality and empathy first order themes

Raw themes	1st order
1) seeing other injured athletes 2) hcp relating or not relating to them as aths.	Shared social reality
3) listen support 4) emotional support 5) care & encourage	Empathy

Appendix L

Interview notes for shared social reality and empathy first order themes

1) Shared social reality

- seeing other injured athletes
  - other hep. ath. told her not to worry about stress fracture cuz they had some inj. & overcome them
  - it was helpful that she saw others who were hurt & come back to play
  - he wasn't the only one on the team that was hurt & this made the exp. easier since you have support & you're not isolated being the only one inj.
  - she though it was helpful that she met other injured ath. in the clinic who were going through same things as she was
  - helped that others were inj. --> "I'm not a wimp. I'm not the only one hurt"

- -ve --> hcp not relating to them as athletes
  - she believes that Drs. who aren't aths. don't understand what aths. are going through in an inj.
  - was fed up with family Dr. who said inj. and track were no big deals --> "This is a big deal, it's my life"
  - -ve --> U. ther. doesn't understand how much time an ath. puts into sport & how much it means to you
  - he doesn't believe a lot of what any Dr. would tell him cuz they don't know him --> don't know how imp. swimming was & is to him
    - +ve --> present Dr. cuz he knows "I need to work out and it's a part of me"
    - he found a chiro. he likes cuz she swam Nationally & "she understands the inner drive"
  - see a sports specialist for inj. cuz they understand how imp. athletics are to you; Dr. must understand that you are an ath. & your whole life revolves around sports
  - "it's not right for doctors to dismiss athletics as something that is unimportant"
  - she listened to massage ther. cuz he had worked with many other aths. & knew what it was like for aths. to deal with pain
  - had confidence in ER Dr. --> seemed competent, sports specialist, U. ther. told her this Dr. was good
  - +ve --> orthos. cuz they realized biking was his life
  - Dr. made her feel better cuz Dr. related her own exps. of stress fractures & how Dr. returned to comp. from them
  - U. Dr. gave her hope cuz Dr. had stress fractures & came back to compete when she was an ath.

2) Empathy

- listening social support
    - Dr. was personable & made her feel comfy
    - +ve --> chiro. --> "he listened to me"; "he didn't ignore me"
    - like Dr. who was friendly
    - went to local Dr. and liked him cuz he listened to her that she was in a lot of pain & he put the cast on gently
    - pain specialist was good cuz he took chronic pain people seriously & didn't label them; took the time to diag. inj.
    - Dr. was polite & gave her the time she needed; she liked all of the Drs. who spent time with her & showed an interest in her
    - physio was good cuz he talked to her about various exps. and not just about her inj.
    - saw U. ther. whole yr. --> he spent time with her & explained things to her
    - +ve --> another U.'s sports Dr. who took the time with him & showed him how to stretch his groin properly
    - clinician was "amazing" cuz he spent time with ath. by coming in early, staying late
    - +ve --> U. ther. who answered ?s thoroughly
    - advice --> try to get therapy done at clinic that is open to what you have to say
    - she felt alienated from coach cuz injs. were never communicated to him
    - she didn't like family Dr. cuz he didn't spend enough time with her in past
    - 4-6 weeks after initial inj. he stopped seeing U. ther. cuz he didn't feel like she took the time with him; felt she paid more attention to others (her favourites) and doesn't treat everyone fairly
        - this -ve exp. taught him not to rely on just one person to help him; her attitude made ath. think that "if you don't give a shit, I will"
    - he didn't feel he was high on the U. ther. priority list
    - bad impression of clinic cuz she felt U. ther. didn't want her in therapy room --> she felt she wasn't imp., only fball & hockey players were imp. and wanted by ther.
    - didn't like U. ther. cuz ther. made ath. feel like "a pain" & she didn't have time for ath.
    - "therapist was stupid" cuz ther. never listened to her that her shins very painful
        - ther. didn't listen to her & blames ther. for her shins getting to the point where she needed surg.
        - ther. wasn't "cluing in" that inj. was more serious than she first thought
        - frust. that she wasn't being listened bo by coached & ther. wrt. seriousness of inj.

- -ve --> people at hosp. that didn't take time to tell her exactly what she fractured in her ankle and they were more concerned with getting people in & out as quickly as possible
- hosp. people should have spent time with her & told her exactly what happened to her ankle
- she never said much about her stress fractures cuz she felt others had more to worry about than just her

- emotional social support
- felt that 2nd U. coach wasn't receptive to injs. & coach would only believe inj. is bad when it is really visible
- felt that coach & U. ther. weren't concerned about her inj. & weren't supportive
- glad 2 friends picked her up after scope --> supportive
- family was compassionate when she tore her ACL
- wanted her knee scoped at home cuz she felt that people would be concerned about her & she felt alone, afraid (not at home when she hurt her knee)
- bothered her during inj. that coaches paid more attention to uninj. teammates that to her
- she liked it when one teammate was helping her after she hurt her sh. cuz she liked this teammate
- glad she was being taken care of
- glad teammates were concerned about inj. and asked her about it
- like talking to asst. coach about inj. cuz she liked him
- made her feel good that coach was concerned about getting her back from scope asap.
- felt patronized & babied by Mom's reassurance that everything would be okay after he hurt his back
- boyfriend showed up unexpectedly in therapy room after she was inj. --> "I felt safer" & cried less
- teammates didn't check up on her after inj. --> "I didn't care because they weren't my friends any way"
- would have felt more at ease and less afraid if a close friend was there when she was inj.
- advice --> having a lot of family support was a big help
- parents were there for him but weren't going to pressure him to talk about his inj.
- she sensed coaches were hesitant in believing she had a 2nd stress fracture
- coach wasn't very emt. when she told coach that she couldn't compete that day due to foot pain
- glad parents were present when she hurt her foot cuz no one would have been there to tell her there are other things more imp. than athletics
- felt better when asst. coach hugged her & enc. her after she told head coach she couldn't compete that day due to inj.
- Mom doesn't understand that she loves sports & yelled

at her cuz she fractured her ankle
- U. vball coach made her go to therapy & get ankle taped --> made her feel good
- coach never asked her how her shins felt --> "all the coach cared about was if I could play"
- coach didn't play her much in her 5th yr. of U. bball cuz coach told her that she was washed up & too slow to play due to her knee inj.
- family & friends were very supportive in inj. exps.
- +ve --> family cuz they supported him during inj. through encouragement
- "physically, therapists & doctors help you, but not emotionally or psychologically"
- "therapists & coaches should be more emotionally there for you during an injury"
- when she told coach that she wouldn't be able to compete for 6 weeks due to inj, the coach didn't say much & didn't seem worried --> "I felt she never had time for me"
- she went home a lot during her stress fracture cuz she was emotionally stressed & they cared about her
- +ve --> parents who were always supporting him & telling him that he'll get better
- during back problems, coaches didn't have time to deal with them cuz she wasn't one of the top aths.

- +ve roles due to caring & encouragement
- U. ther. was supportive by telling her that she was making rehab progress & doing well
- liked Dr. cuz he was reassuring
- U. ther. encouraged her & told her that inj. was healing quickly
- Dr. was good cuz he reassured her that her fractured ankle would heal properly
- U. ther. was caring, seemed encouraged by her progress, wanted her to get better which motivated her
- like massage ther. cuz he believed she was inj. & told her to take care of it; most understanding and made her feel better about quitting sports --> made her think about life, her body, & her future
- her -ve attitude about scope was turned around after she talked to coaches & they believed & encouraged her that she would be back playing soon
- +ve role --> her coach --> "always there and supporting me"
- after she hurt foot she felt scared cuz she wasn't allowed to talk to her coach after she hurt herself
- -ve --> coaches made fun of him when he did not perform well due to his inj.
- became mad at coaches cuz he told them he was inj. & they trained him very hard for the next 4 days in a row --> mad at coaches
- felt Dr. at home was caring

Appendix M

Derivation of altered self-concept, threats to sport goals, and a sense of personal control first and second order themes

Raw themes	1st order	2nd order
1) feel. of loss of indpdnce. 2) self-perc. & i.d. as ath. 3) worry ==> others think 4) not admit pain amt.	Overall self-perception	Dealing with altered self-concept
5) loss of phy. attr. due to inj. 6) disadv. & adv. of phy. aids 7) feel that body let them down	Physical self-perception	
8) feel. 1st time back from inj. 9) distress--> not reach. preinj. level	Threats to sport goals	
10) not again thoughts 11) personal control	Sense of personal control	

Appendix N

Interview notes for altered self-concept, threats to sport goals, and sense of personal control first and second order themes

1) Dealing with an altered self-image

1a) Self-perception

- feelings of loss of independence
  - sick of being an invalid and she wanted to get rid of crutches asap.
  - couldn't walk off bball court and was put into wheelchair to be taken to therapy room --> felt stupid cuz she wasn't used to being inj. & felt like an invalid
  - she didn't like her loss of indpdce. when she had her cast on
  - 2nd stress fracture --> lots of people were wanting to do things for her which made her feel helpless
  - she thought she could handle her knee inj. herself

- self-perception & identity as athlete
  - in preinj. successes she felt high cuz she realized her successes were due to herself working hard
  - he had not doubts that he would get back to the same level preinj. due to his work ethic
  - even though ankle was bad she practised with vball team cuz she just wanted to be active again
  - cycling again after disk surgery gave him a "sense of security & self-confidence"
    - felt wonderful when he could bike again after disk surg. --> "biker loves his bike & lives and dies for his bike"
  - wanted to swim again --> "if made me special"; "it defined who I was"; by not swimming, her felt he lost some of his identity
  - "I will always train until the day I die"

- worry about what others think
  - at Regionals she was embarrassed cuz the others didn't know or understand the extent of her shin injs. & its -ve effects; they didn't know why she was going so slow
  - wanted her coach dead cuz coach didn't believe her legs would go numb & therefore wouldn't take her off during bball games; coach didn't believe that her shins were so ser. inj.; "not being believed is no fun"
  - when he had stress fracture he was concerned about what people thought of him --> is he really inj.?
    - was thinking a coach was saying 'Oh he is injured again'
  - when hip inj. wasn't diag., people were saying he had lost interest in cycling & was using this supposed inj. to get

out of cycling (he is not inj.)
- when back hurt he didn't want to get off bike cuz he wanted to prove to people that he could cycle through pain
- "I don't want anyone to think I'm playing half-assed" when they don't know the extent of his inj.
- he quit cuz his coach laughed at the way he inj. his knee in the pool
- when she quit track due to back inj. she was relieved that coaches and teammates understood why she was leaving
- during shin inj. she was worried about what others were thinking
- she switched U. sports after 2 yrs. & was worried that if she got hurt again they would say 'What a loser, she's always hurt'

- not admitting in pain
- after knee scope she didn't want to be an example of a wimp to younger players & therefore made sure she did rehab in front of them
- when teammates sent to see her in therapy room she didn't want to cry cuz she didn't want to look like a wimp
- didn't tell anyone that her shins hurt initially cuz she didn't want to be considered a wimp; didn't want to whine
- coaches are awful; "make you feel like a wimp and whiner during an injury"
- collapsing on track gave her an excuse to take some time off
- she believed she would be a wimp if she quit
- she didn't want to just leave track, but collapsing gave her an excuse to get out
- when 1st feeling pain, her coaches called her a wimp
- aths. "believe we are indestructible"; "we don't want to admit we have to stop"
- b4 hip inj. he felt invincible cuz he would crash his bike, get up, & finish race
- up to time of 1st ser inj. he didn't believe in injs. cuz he had always been 100% healthy
- she was embarrassed when she told head coach that she couldn't compete that day due to foot pain
- she didn't pull our after feeling pain cuz she wanted to prove she could tolerate pain just like other, more elite & older parts. did
- he believes one must always put up with some pain
- "I am my own worst enemy" cuz he pushes himself too hard & gets inj.
- hurt his back again doing squats but didn't go to hosp. cuz he wasn't on his hands & knees
- when swimming again after his inj., he wanted to push through pain like he had seen in movies like Rocky; "I love pain" due to role models of Dad & movies (Rocky)
- when he was younger, his Dad called him a "suck, fanny, fag"; Dad told him that he shouldn't cry for phy. pain,

but he could cry for emt. pain
- his coach's favourite saying was 'get tough'
- her Dad always told her to 'Tough it out' and she therefore didn't complain and thought she would be okay when she was inj.

1b) Physical self-perception

- loss of physical attractiveness due to injury
  - it bothers her that her ankle has been swollen since she fractured it --> "it's fat now"
  - "it was disgusting" --> foot was dangling when her bball shoe was taken off
  - after getting knee rec. cast off, she felt disgusted with knee cuz it looked gross
  - she didn't want anyone to look at her inj. knee in front of everyone
  - after ACL surg. she noticed her muscles had atrophied & it was ugly

- advantages & disadvantages of physical aids
  - ankle tape --> "a lot of confidence when I put it on"; "I'm just beyond confident and my body reacts to it"
  - wearing knee brace built up her confidence in her knee
  - ankle inj. wasn't diag., so Dr. gave her orthotics --> "miracle cure" and "gave me hope" that orth. would help pain decrease
  - he dreaded groin bandage cuz he felt that it restricted him totally
  - had shin taped on daily basis & she felt wimpy when she had the tape on cuz people may have thought that she wasn't really hurt
  - resented disk inj. cuz he spent his 1st yr. of a part. U. programme in a back brace --> classmates identified him "as the person with the brace"
    - also hated brace cuz the one thing he loved to do in life he had to wear a brace to do it (cycle)
    - viewed wearing brace as humiliating that after being an ath. that he would have to wear something like this; would have been easier to accept to wear if he wasn't an ath.
  - she was self-conscious about wearing knee brace
  - she didn't like wearing knee brace cuz she felt it slowed her down
  - didn't like wearing ankle brace cuz it limited her
  - worried about walking around with an ankle cast on for 6 weeks; she didn't want the cast on
  - felt wimpy when shin was taped

- feelings that body let athlete down
  - "wish my body was a bit stronger"; "my body is wimpy"
  - didn't place in 1st race back after 8 mo. rest --> "the race horse is dead, put me in a pasture"

- "My body hates me"
- hardest part on inj. exp. was being inj. a 2nd time --> felt that body gave out and cheated him

2) Threats to sport goals

- returning to bball after scope she was wondering if she could still play
- frust. that shots weren't falling after coming back from inj. --> "it's not worth playing"
- upset the 1st time she tried shooting after inj. cuz she couldn't even lift bball up with hurt arm
- felt discouraged after playing game & was told that one could tell she was still hurt
- after inj. she didn't think she would get her starting position back again
- during inj. she was concerned that she would never be able to play as well as or as good as b4 inj.
- hard to go back to practice and not be able to do some drills
- worried about new players coming into bball camp after ACL surg.
- tr. after stress fracture, she was nervous cuz she wasn't fit & didn't think she could keep up with teammates
- 1st practices back from fractured ankle --> worried about if she could do the drills
- she was hoping that she could play vball at her preinj. level when she had her ankle cast on
- he wanted to prove that he could beat the person who replaced him on Provincial team and won Canada Cup gold cuz he had beaten this guy b4 w/out the inj.
- disappointed when watching Provincial meet due to stress fractures cuz she could have run & done well
- after taking some time off due to stress fractures, she rand in a race & did poorly. So, she was thinking what could she have done if she was healthy
- he wants to compete to the best of this ability in a healthy body state --> wants to lay his cards on the table as a healthy ath.
- competing was hard cuz he knew he could perform better but couldn't due to this inj.
- frust., embarrassed
- at Regionals she was embarrassed cuz she couldn't do things as fast as others as a result of her inj.
- she didn't want to go to these cuz she knew she wouldn't be able to compete
- after surg., she was frust. cuz she couldn't play her best until the end of the season due to shins
- ran track in 1st yr. U. --> slowest times ever & she couldn't believe she was running that slow; depressing
- her hs. regionals was the worst day of her life cuz she didn't qualify for finals for the 1st time ever due to inj.

- depressed
- after not placing in 1st race back after 8 mo. break she wasn't going to race again until she was in shape cuz she didn't want to lose & be embarrassed
- got upset & sick over running poorly due to back pain
- by not running well, she began to believe that she couldn't run anymore
- made her feel awful
- it was hard to see people win that he used to beat b4 inj.
- when 1st back from inj. he felt bad emt. & phy. when comparing himself to others
- "I don't want to participate in something I can't give 100% to"
- fearful about comeback cuz she doesn't want her body to fall apart
- "I don't want to go back and not be good"; "don't want to go back and be average"
- he couldn't last a whole game after inj. & didn't want to be a half game person
- "that was my biggest fear, not being able to do it"
- "worried if I could play as good as I did"
- 1st time playing soccer after inj. --> nervous, scared
- worried about not being able to shoot soccer ball as hard
- most upsetting with ankle inj. was he knew he would lose some speed
- "I was frustrated" --> ankle inj. slowed her down defensively which was the best part of her game

3) Sense of personal control

- thoughts of 'not again'
- didn't think ankle was going to get better cuz she kept going over on it
- hurt ankle in last yr. of U. soccer --> angry & frust. cuz she thought how could this happen in her last yr. of school
- "I broke it. Here we go again"
- 1 yr. after stress fractures she go hit with a shot put and was thinking "not again"
- when ortho. told her she would need a scope she felt "here we go again" cuz this was her 3rd knee inj.
- when found out she had stress fractures she thought she had been through enough the last 2 yrs. (had a ser. knee inj.)
- frust. with having to deal with the exact same inj. again & again
- after 2nd back inj. he was thinking he was back to square one
- hurt back a 3rd time and he was sick & tired of the pain process --> "when is this going to end?"
- hurt back a 4th time --> "pissed off"
- after 2 ser. inj. he was asking himself what inj. is

coming next?
- after 2nd stress fracture --> wondering if she'll keep getting them
- how can she get better if she always has to start from scratch
- twisted knee again and thought "Oh god, here we go again"
- when he pulled his ham. he thought "here we go again"
- devastating since he had just overcome another ser. inj.
- after pulled ham. a 3rd time he thought he was going 3 steps fwd. and 2 steps back
- after being hardly able to walk on ankle, she was thinking "not again. This is another setback for me"

- personal control
- therapy --> "went really well. I worked hard & it got better quickly"
- she won't let chronic back pain control everything --> doesn't think about pain now
- tried to reassure teammates that sh. was okay cuz she was the captain & supposed to be in control
- frust. cuz he was doing what he was supposed to do & still got inj.
- "felt lack of control in whole injury experience because the injury had control of me and it wasn't listening to my commands to get better"
- felt in control of ACL rehab. cuz Dr. at home laid out her. programme and she told trainers at U. what to do
- frust. after she hurt knee a 2nd time
- quit her. at end of vball cuz she was frust. with ankle's lack of progress, pain
- she wanted immediate results
- frust. cuz she was spending so much time doing therapy that not only should ankle have been 100%, but it should've been 100% earlier
- in beg. of ankle her. she felt that she was wasting her time cuz ankle wasn't getting better
- didn't get her. after 2nd ankle inj. cuz in 1st inj., she had went to her. for so long but it didn't really help
- she was scared that she lost so much muscle with cast on
- "did all the things I was supposed to do" in her. and ankle still bothered her
- ath. felt helpless during stress fracture cuz she couldn't do anything to help it; just had to wait for it to heal
- she was nervous if she would need rec. after scope
- he became disillusioned cuz he was seeing physio. & inj. wasn't getting any better

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