

# DISSERTATION ASSESSMENT PROFORMA:

Empirical <sup>1</sup>

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**CARDIFF METROPOLITAN UNIVERSITY**  
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**THE RELATIONSHIP BETWEEN SOURCES OF  
CONFIDENCE AND RE-INJURY ANXIETY AMONG  
INJURED ATHLETES**

**(Dissertation submitted under the discipline of  
PSYCHOLOGY)**

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**THE RELATIONSHIP BETWEEN**  
**SOURCES OF CONFIDENCE AND RE-**  
**INJURY ANXIETY AMONG INJURED**  
**ATHLETES**

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## ABSTRACT

The focus on the present study was to investigate the relationship between sources of confidence and re-injury anxiety among injured athletes. Injured athletes (N=45) completed the Modified Sources of Sport-Confidence Questionnaire (M-SSCQ; Magyar & Duda, 2000) and the Re-Injury Anxiety Inventory (RIAI; Walker, Thatcher & Lavellee, 2010). A multiple regression analysis was adopted in order to examine the relationship between sources of confidence and the subscales of re-injury anxiety (frequency rehabilitation, intensity rehabilitation, frequency re-entry, and intensity re-entry). This analysis also gave a score as to the variance the M-SSCQ could explain the re-injury anxiety subscales. All subscales were found to be significant ( $p < .05$ ) when explained by M-SSCQ. Social support ( $p < .01$ ) and environmental comfort ( $p < .05$ ) were found to individually contribute to an increase in re-injury anxiety in both a rehabilitation setting and on re-entry phase. Self-presentation was also found to be significant ( $p < .01$ ) to increase the frequency of re-injury anxiety in rehabilitation. These findings suggest that specific sources of confidence can increase re-injury anxiety and reduce the chances of successful return to competition. However further qualitative research may help to explain why athletes perceive this to be the case.

# **CHAPTER 1**

# **INTRODUCTION**

## **1.1 Introduction:**

Individuals that take part in competitive sport run a high risk of becoming physically injured sometime in their career (Tracey, 2003). This is not only a physically painful occurrence to recover from, but also mentally difficult. Walker (2009) stated that given the volume and severity of injuries that occur in sport, the quest for continued knowledge about maximizing athletes' psychological recovery and speeding up their return is a work in progress. Research has found that one of the major cognitive responses following injury is the decrease in athlete's confidence beliefs when returning to competitive sport. (Bandura 1990; Heil 1993; Taylor & Taylor 1997; Wiese-Bjornstal, Smith, Shaffer & Morrey, 1998). Self-confidence theories has been modified and reconceptualised over the past thirty years. This started with an individual's feelings of self-efficacy, to the recent literature involving sources of confidence in an injury environment (Magyar & Duda, 2000).

Further research on athletes return to sport has found that although an athlete may be physically ready to return, they may not be psychologically (Wadey & Evans, 2011). This has led to an increased amount of research involving the coping strategies and factors that affect an athlete's injury, specifically, in the present study athletes concerns when injured through to return to competition.

Wiese-Bjornstal et al. (1998) suggested that there were many psychosocial variables that can influence an injured athlete's wellbeing and consequently return to sport outcomes. Previous research has found that concerns of re-injury are prominent in athletes return to competition (Podlog & Eklund, 2007). Situations of athletes experiencing re-injury anxiety can negatively impact sporting performance and indeed increase the risk of re-injury itself (Johnston & Carroll, 1998a; Wadey & Evans, 2011). This has been found to be one of the most salient sources of stress on return to sport (Bianco, Malo & Orlick, 1999). Despite previous research there has been little attention from investigating how re-injury anxiety can affect athletes' sources of confidence. Therefore the purpose of the present study is to investigate the relationship between sources of confidence and re-injury anxiety among injured athletes. This involved forty five athletes who were asked to complete a Modified Sources of Sport Confidence Questionnaire (M-SSCQ) and a Re-injury Anxiety Inventory (RIAI). Results were then analysed to discover whether there was a relationship between sources of confidence and athlete's perceptions of re-injury anxiety.

# **CHAPTER 2**

# **LITERATURE REVIEW**

## **2.1 Introduction:**

This chapter will open by discussing injury in athletes and especially the psychological factors and responses involved with this. This will then be followed by the critique of the sports confidence and re-injury anxiety literature. This will provide a back drop for the present study. Finally the chapter will conclude on why re-gaining confidence is important in injured athletes and the purpose for the study in progress.

## **2.2 Injury in Sport:**

Returning to sport following a serious injury can be a difficult process for competitive athletes (Bianco, 2001; Bianco et al., 1999). A large number of research involving injured athlete's focuses more on the physiology and medical aspects instead of the psychological effects (Podlog, Dimmock & Miller, 2011). Injury prohibiting continued athletic participation has been hypothesised to have a predictable emotional impact on athletes (Rotella & Heyman, 1986). However lately there has become growing amounts of research concentrating on the return phase to sport, from this it has been recognised the significance of confidence to athletes when returning to sport (Carson & Polman, 2008; Wadey & Evans, 2011). Athletes report a wide range of emotions following injury, including anxiety, fear, and anger (Macchi & Crossman, 1996; Smith, Scott, O'Fallon, & Young, 1990; Tracey, 2003). Johnston and Carroll (1998a) stated that fear of re-injury was the prime emotion associated with returning to sport following injury. Although there has been attention drawn to the importance of confidence in injury, and how athletes react to re-injury anxiety, not much research has covered the sources confidence athletes perceive as positive or negative in relation to re-injury anxiety.

## **2.3 Self-Efficacy:**

Bandura described self-efficacy as "one's belief that a certain level of performance can be attained" (1977, p.203). Bandura (1977) suggested that behaviour, cognitive, physiological and environmental factors all contribute to one's situation specific efficacy beliefs. According to Bandura (1977) efficacy expectations can be predicted by four sources; performance accomplishments, vicarious experience, verbal persuasion and emotional arousal (Bandura 1977). Some 20 years later this was reconceptualised by Bandura (1997) to encompass six sources that could predict efficacy expectations; performance accomplishments, vicarious experiences, imaginal experiences, verbal persuasion, physiological states and emotional experiences (Bandura 1997; Maddux & Gosselin, 2003). Indeed it has been suggested that all six sources impact efficacy judgements and

also self-confidence, with the mastery experiences being the most salient predictor (Feltz, Landers & Reader 1979; Schunk 1994; Magyar & Duda, 2000). Despite the fact Bandura's self-efficacy theory has shown to be a good theoretical framework of the various sources of self-efficacy it is not sports specific, so therefore can be questioned whether to be reliable in the context of popular team sports athletes as opposed to unique sporting situations (Martens 1979; Hays, Maynard, Thomas & Bawden, 2007).

#### **2.4 Sources of Sport Confidence:**

As a result of this criticism Vealey (1986) provided the first sports specific confidence framework. This model was recognised to be different from Bandura's Self-Efficacy theory as the focus of it was no longer self confidence in general, but was applied specifically to a sporting context (Vealey, 1986). This model was separated into two categories; trait and state confidence, this included a dispositional construct which was called competitive orientation. This draws on the particular type of goal that an athlete would strive towards in a competitive situation (Vealey, Hayashi, Garner-Holman & Giacobbi, 1998). Vealey's (1986) model predicted that trait confidence would interact with the competitive orientation to provoke state confidence in sport. However some limitations were discovered, this included inadequate support for the relationships found in the study. In fact Martin and Gill (1991) found that trait self-confidence was a better predictor of sporting performance rather than state self-confidence.

Having identified the weaknesses in the first sport confidence model Vealey et al. (1998) introduced a more advanced framework. The reconceptualised model identified nine sources of sport confidence, namely; mastery; social support; demonstration of ability; physical self-presentation; physical/mental preparation; coaches' leadership; vicarious experience; environmental comfort; and situational favourableness, these were seen to be most useful for unique sports athletes (Hays et al., 2007). Indeed Bandura's self-efficacy beliefs were not deemed to be accurate due to the framework not being sports specific, however there are clear similarities between this and Vealey's sources of sport confidence (Vealey et al., 1998). An example of this is that Bandura identified mastery and vicarious experiences as being a significant source of confidence, just as Vealey also did.

In Vealey et al.'s (1998) study there were gender differences when athletes perceived their sources of confidence. For example female athletes were found to identify social support as a more important source of sports confidence as opposed to males. Whereas as males were found to perceive demonstration of ability as a more important source of confidence.

Gender differences when athletes appraised sources of confidence are consistent in research studies. Hays et al. (2007) also found that males focussed more on the success of competition outcomes whereas females identified good personal performances as a source of their confidence (p.450). However this study investigated salient sources of confidence in successful world class athletes in contrast to Vealey's (1998) high school and collegiate sample.

In contrast to previous research Wilson, Sullivan, Myers and Feltz (2004) studied the sources of confidence in masters athletes. This was the first study to measure sources of confidence in athletes aged of 50-96 and the validity of Vealey et al.'s (1998) SSCQ model against this sample. Firstly Wilson et al. (2004) suggested that SSCQ model was a poor fit for the sample studied; this was due to the unique difference between high school and collegiate athletes in comparison to masters athletes. In regards to sources of confidence used by masters athletes, situational favourableness was viewed as rather 'fickle' and perceived as unimportant in masters athletes (p.381). However results were consistent with Vealey et al. (1998) when masters athletes perceived physical/mental preparation as one of the most important in relation to other sources proposed. Wilson et al. (2004) also found that physical/mental preparation was predictive of trait confidence as also found in Vealey et al.'s (1998) sample. Wilson et al.'s (2004) study can be transferred to signify the importance of self-regulatory behaviour in forming confidence beliefs for athletes of various ages. This is an important contribution to knowledge, as it has been identified that different age groups differ when perceiving sources of confidence as salient.

As a whole Vealey (1998) and Hays et al. (2007) studies were to investigate the most salient sources of confidence for athletes in a sporting context. The sources identified support ones identified by Bandura (1977; 1997). For example all studies identified that individuals gain confidence from past performances (e.g., performance accomplishments, mastery demonstration of ability, experience), comparing ones skill to others (e.g., vicarious experience, competitive advantage), feedback that lends support (e.g., verbal persuasion, social support), feeling physically fit (e.g., physiological states, physical and mental preparation, preparation), and belief in one's coach (e.g., verbal persuasion, coach leadership, coaching; Short & Ross-Stewart, 2009).

The sources of confidence literature discussed above indicates that practitioners also have to take into account various factors when identifying athletes' sources of confidence and self-efficacy beliefs (Feltz, Short & Sullivan, 2008). This includes gender differences, age of participants, level of sport played, as well as an athlete's individual variables.

## **2.5 Self-Confidence in Injured Athletes:**

Magyar and Duda (2000) studied the relationship between sources of sport confidence and confidence restoration in injured athletes. They found that the most prominent source of confidence were physical and mental preparation for a task orientated athlete and trainers leadership for an ego orientated athlete (Magyar & Duda, 2000). Those sources were found to be more salient than the other sources of sports confidence such as mastery, demonstration of ability and vicarious experience. This study takes into account the rehabilitation phase and also the return to sport when athletes perceived their sources of confidence. Similar results were found in Evans, Hardy and Fleming (2000) study, the sample for this study were three rugby players returning from injury. A strength of this study was it lasted for the entire rehabilitation period until the athletes had regained full confidence in their ability. This meant that the athletes could be assessed at various times during the rehabilitation period, therefore identifying what sources of confidence were most beneficial at the various phases of injury. Both these studies similarly reflected also on the types of goals set by the injured athletes and how this affected their sources of confidence. Evans et al. (2000) stated that “task support, including task challenge, primarily took form of goal setting, and was used to enhance motivation and adherence” (p.203). This conclusion can have a large effect on how practitioners now work with athletes through rehabilitation, and the use of task involved goals to increase motivation and adherence to the rehabilitation programme.

Some 6 years later Podlog and Eklund (2006) carried out a longitudinal study in competitive athletes returning to sport following serious injury. The main findings were similar again to those previously. In terms of sources of confidence performance accomplishment through goal setting was the most salient for athletes in both the rehabilitation phase and also returning to sport following serious injuries.

Carson & Polman (2008) carried out a study involving professional rugby union players returning from ACL injury. The most significant finding from this study was that social support was the most important source of confidence through the injury phase of the athletes. Social support was found to be important to all players; this support came from a range of sources including teammates, coaches and medical staff (Carson & Polman, 2008). A weakness to this study was although it allowed us to gain great knowledge about their sample used, they failed to generalise their findings to apply it to a larger sporting population. As a result, this study could be inappropriate for many practitioners treating athletes with different injuries. Wadey and Evans (2011) discovered similar results; they



identified that informational support from the doctor or medical staff acted as a source of confidence to withstand the sporting strains.

Podlog, Dimmock and Miller (2011) looked at the flip side of sources of confidence and investigated the concerns following injury rehabilitation. They discovered that salient apprehensions among athletes returning to sport after injury included anxieties including; concerns with an inability to perform to pre-injury standards, and feelings of isolation and re-injury.

Although all the previous confidence research that has been reviewed has in some way broadened psychologists knowledge and understanding of the sources of confidence to injured athletes returning to sport, there are still limitations. Gallagher and Gardner (2007) proposed that individual dispositional differences have an influence on each athlete's response to injury, which may mistake the value of case studies. Also there is little research to show the relationship between sources of confidence and a debilitating factor to confidence in injured athletes such as re-injury anxiety.

## **2.6 Re-injury Anxiety:**

"Anecdotal and clinical reports indicate that returning athletes tend to have fears about re-injury" (Rotella, 1985; Cited in Podlog & Eklund 2006, p.44). Heil (1993) speculated that fear of injury is always present for all athletes whether if they have been previously injured or not. Fear of re-injury is suggested to produce psychological decrements such as reduced confidence and poor focus that prevent progression in the return to sport. Although Heil's (1993) study touches on the fact that confidence is reduced due to the fact of re-injury anxiety, it doesn't outline and show the relationship of what sources of confidence decrease, leading to a delayed return to sport. Taylor and Taylor (1997) and Johnston and Carroll (1998a) both had similar results that were proposed by Heil (1993). They also stated that the fear of re-injury had developed from a lack of trust in the injured body part. This lack of trust and confidence could then influence the re-injury through Heil's (1993) proposed mechanisms, namely, psychological changes, physiological changes and autonomic changes. These mechanisms could result in an unpredictable performance in rehabilitation and prolonged return to competition.

Walker (2009) explored the responses to athletic injury in three participants through a longitudinal study. She found that the participants thought about their injuries re-occurring during the rehabilitation exercises, coming back to training and also competing. Walker (2009) also stated that the participants reported symptoms such as feeling tense and

sweaty. These emotions appeared to show anxiety instead of fear which previous studies had reported (Bianco, 2001; Johnston & Carroll, 1998a; Podlog & Eklund, 2005; Podlog & Eklund, 2006). Previous research found that re-injury anxiety could manifest itself in several ways during athletes return to competition. This included not giving maximum effort, avoiding situations that could cause re-injury, and doubting readiness to return; these factors could all negatively impact sporting performance and increase the risk of re-injury (Evans et al., 2000; Johnston & Carroll, 1998a; Wadey & Evans, 2011).

Walker, Thatcher & Lavalley (2010) then developed the re-injury anxiety inventory (RIAI), this paper outlined the initial development of an instrument to measure re-injury anxiety with 248 injured athletes. As no previous researchers had attempted to create a tool to measure re-injury anxiety it was successful and provided a stepping stone for practitioners to predict athlete's re-injury anxiety.

### **2.7 Reason for Further Research:**

The conclusion that has been drawn from the different areas of research that have been touched on is that athletes use different sources of sports confidence when returning to competitive sport from injury. However there are very few pieces of research that compare the sources of confidence to the re-injury anxiety and what affects occur. Therefore the purpose of this present study is to investigate the relationship between sources of confidence and re-injury anxiety in athletes returning to competitive sport. Based on the findings of the research that have been outlined in the chapter it is hypothesised that demonstration of ability and social support will be strongly linked to successful return to sport. However this has not been identified in relation to re-injury anxiety and how this component will affect these sources of confidence and the overall return to competitive sport.

# **CHAPTER 3**

# **METHODOLOGY**

### **3.1 Research Design:**

The purpose of this study was to investigate the relationship between sources of sport confidence and re-injury anxiety in athletes returning to competitive sport. To be able to examine the relationship between athletes' sources of confidence and re-injury anxiety a quantitative research design was adopted through the use of questionnaires. Questionnaires are widely used within quantitative research where information is gathered from a large sample and then analysed using statistical techniques to address the research question (Gratton & Jones, 2010).

### **3.2 Participants:**

A purposeful sample of injured athletes who met a number of criteria took part in this study. Participants were required to have been injured within the last 5-6 months - this time period was chosen to minimise participant's memory loss (Coolican, 2009) and their injury to have been sustained through sport and lasted a minimum of 5 weeks. The participants (N=45) consisted of mixed gender, male (N=35) and female (N=10) aged 18 and over (mean= 21.56; SD= 1.41). Participants represented a range of sports, and had sustained a variety of injuries: broken ankle (N=7), broken/fractured wrist (N=6), torn ACL/PCL/tendon damage in knee (N=6), ligament damage/sprained ankle (N=4), lower back muscular injury (N=3), broken hand/metacarpals (N=3), torn hamstring (N=3), sprained/fractured knee (N=2), hip injury (N=2), torn AC (N=1), broken neck (N=1), dislocated shoulder (N=1), bicep tendonitis (N=1), broken collar bone (N=1), broken leg (N=1), tennis elbow (N=1), concussion (N=1) and torn rotator cuff (N=1).

### **3.3 Measures:**

**3.3.1 Sources of Confidence-** A modified version of The Sources of Self Confidence Questionnaire (M-SSCQ) developed by Magyar and Duda (2000) was used to examine athletes' sources of confidence.

The M-SSCQ includes 43 items and a total of 9 subscales: Mastery (i.e., "mastering a new skill in rehabilitation"), demonstration of ability (e.g., "proving I am better than others in rehabilitation"), physical/mental preparation (e.g., "psyching myself up"), Physical self-presentation (e.g., "feeling good about my weight"), social support (e.g., "getting positive feedback from my teammates and/or friends"), coach/physios leadership (e.g., "knowing my coach is a good leader"), vicarious experience (e.g., "seeing a friend perform rehabilitation successfully"), environmental comfort (e.g., "liking the environment where I

am performing”), situational favourableness (e.g., “feeling that everything is going right for me in that situation”). Athletes were asked to respond to the statement “I usually gain/gained confidence in my rehabilitation programme from...” and then rate the level of confidence on each item on a likert scale from 0 (not at all) to 7 (always).

Previous research has had mixed results when regarding the reliability to measuring athlete’s sources of sport confidence. Vealey et al. (1998) found that all nine sources of confidence had acceptable reliability scores (.71 - .93), however Magyar and Duda (2000) discovered situational favourableness as questionable when applied in an injury setting. Due to the contradiction of previous research a reliability test was performed to confirm reliability within the present study.

**3.3.2 Re-injury Anxiety-** The Re-injury Anxiety Inventory (RIAI) developed by Walker, Thatcher and Lavellee (2010) was used to examine re-injury anxiety. When athletes were completing this questionnaire they were asked to rate the level (how much) of the symptom they experienced on a likert scale that ranged from 0 (not at all) to 3 (very much) and then the frequency (how often) on a likert scale that ranged from 0 (never) to 7 (all the time).

The RIAI items were initially generated by adapting the Competitive State Anxiety Inventory items (CSAI-2). This decision was based on the suggestion by Cupal and Brewer (2001) to use an existing multi-item tool for development. The questionnaire is split into 2 subscales, re-injury anxieties regarding rehabilitation- 13 items (e.g. “I feel/felt nervous about becoming re-injured during rehabilitation”) and re-injury anxieties returning to training or competitive sport- 15 items (e.g. “I feel/felt nervous about becoming re-injured during re-entry into competition”).

A reliability analysis was also adopted within the re-injury anxiety subscales to confirm internal reliability for the present study.

### **3.4 Procedures:**

Athletes that participated in this study were made aware that it was voluntary and if they met the criteria were contacted by the author and asked to take part in the study. All participants were assured of complete anonymity and confidentiality. Moore (2003) advised that confidentiality provides for greater honesty of information. Questionnaires were distributed by the researcher and before completion it was made clear to participants that there were no right or wrong answers. Athletes completed a booklet including an

informational sheet, consent form, demographic sheet, M-SSCQ and the RIAI. Once completed the booklets were collected back by the researcher.

### **3.5 Data Analysis:**

As identified earlier in the chapter, prior to main analysis cronbach alpha tests were completed in order to confirm the internal reliability of both sources of confidence and re-injury anxiety subscales. Cooligan (2009) suggested that scores above .7 were accepted as reliable. However where a subscale had an alpha below .7 individual items were analysed to evaluate whether a single item was reducing the overall reliability of the subscale. In these situations any item that reduced the subscale below .7 was deleted to increase whole subscale reliability. All underlying assumptions were also checked before completing main analysis to ensure results were accurate.

A multiple regression analysis was used to test whether there were any significant relationships between the sources of confidence subscales and re-injury anxiety subscales. Multiple regression analysis was adopted due to its ability to calculate how much of the performance one variable (re-injury anxiety) is predicted by performance on other variables (sources of confidence). The technique is also used to compare the relative predictive powers of the predictor variables in question (Cooligan, 2009). This analysis enables the present study to (a) understand if the M-SSCQ could predict re-injury anxiety subscales and (b) what sources of confidence could best predict the different subscales of re-injury anxiety. Significance was based on a value of  $p < .05$ . All analysis was completed using statistical software SPSS.

# **CHAPTER 4**

# **RESULTS**

#### **4.1 Introduction:**

This chapter will outline the results of the analyses of the relationship between sources of confidence and re-injury anxiety, having first explored the internal consistency of the measures using Cronbach's alpha.

#### **4.2 Scale Reliability:**

The internal reliability for each M-SSCQ subscale was calculated using Cronbach's alpha. *Table 4.1* below shows the original reliability scores and then again after item deleted. Acceptable original reliability scores (.73 to .86) were obtained on all subscales except environmental comfort and situational favourableness.

Due to the extremely low score for situational favourableness this subscale was removed from any subsequent analysis. Magyar and Duda (2000) also questioned whether situational favourableness was applicable in an injury and rehabilitation environment. Following item deletion of an item in environmental comfort a revised Cronbach's alpha of .76 allowed for its inclusion in subsequent analysis.



**Table 4.1. Original and final Cronbach's alpha score for M-SSCQ subscales.**

	Original $\alpha$	Final $\alpha$
Mastery	.83	.83
Demonstration of Ability	.82	.82
Mental & Physical Preparation	.72	.72
Self-Presentation	.85	.85
Social Support	.86	.86
Vicarious Experience	.74	.74
Environmental Comfort	.12	.76
Situational Favourableness*	.18	N/A
Coach/Physios Leadership	.73	.73

\*alpha failed to meet criteria for further testing.

Cronbach's alpha for the re-injury anxiety inventory (RIAI) are presented below in *Table 4.2*. All values exceeded .70.

**Table 4.2. Cronbach's alpha score for re-injury anxiety subscales.**

	$\alpha$
Intensity Rehabilitation	.79
Intensity Re-entry	.87
Frequency Rehabilitation	.72
Frequency Re-entry	.87

### **4.3 Underlying Assumptions:**

Before performing the multiple regression tests, all underlying assumptions were tested. Firstly the assumption of normality was tested to measure the distribution variable from the sample drawn. Scores for skewness and kurtosis were calculated for each of the eight subscales from the M-SSCQ before being transferred into z-scores. All of the subscales successfully achieved a z-score of 1.96 and below therefore indicating that the assumption of normality can be confirmed (Field, 2009). Levenes test for homogeneity of variance was also completed and resulted in non-significance ( $p>.05$ ) for all eight subscales, this suggested that the assumption of homogeneity had also been met, confirming all underlying assumptions (Cooligan, 2009).

### **4.4 Multiple Regression:**

Results of the multiple regression are shown in Tables 4.4 - 4.7.

Before identifying multiple regression results it is important to understand the means and standard deviations of the subscales for M-SSCQ, this is presented in the table below. Social support was found to have the highest mean score (5.30) when athletes perceived their confidence in an injury environment. In contrast to this demonstration of ability had the lowest mean score (3.96), meaning athletes did not rate this as important in the present study.

**Table 4.3. Means and standard deviations for the subscales of the M-SSCQ.**

Sources	Mean	SD
Mastery	4.97	.833
Demonstration of Ability	3.65	1.07
Mental & Physical Preparation	5.09	.723
Self-Presentation	4.33	1.46
Social Support	5.30	.909
Vicarious Experience	4.13	.811
Environmental Comfort	4.36	.817
Coach/Physios Leadership	5.16	.739

*Table 4.4* shows that a maximum of 53% of the variance in the dependant variable (re-injury anxiety subscales) can be explained by the independent variable (sources of confidence). It has been found that 53.6% of the variance in rehabilitation re-injury anxiety (frequency) could be explained by sources of confidence. In contrast, only 19.7% of the variance in re-entry re-injury anxiety (frequency) can be explained by M-SSCQ. However the adjusted R square takes into account a more reliable score in comparison to the sample size therefore correcting the frequency in rehabilitation variance to 43.3% when explained by the sources of self-confidence.

**Table 4.4. Multiple regression model summary.**

	R	R Square	Adjusted R Square	Std. Error of the Estimate
Re-injury Anxiety Subscales				
Intensity Rehabilitation	.683	.467	.348	4.202
Frequency Rehabilitation	.732	.536	.433	5.810
Intensity Re-entry	.598	.358	.215	6.307
Frequency Re-entry	.586	.343	.197	11.097

*Table 4.5* below shows the results from an ANOVA test for re-injury anxiety subscales. This test showed the significance of the r squared values stated in *Table 4*. All subscales were reported as significant at  $p < 0.05$ .

**Table 4.5. ANOVA.**

Subscales	Sum of Squares	df	Mean Square	F	Sig.
Intensity Rehabilitation	556.845	8	69.606	3.942	.002
Frequency Rehabilitation	798.790	8	99.849	2.510	.000
Intensity Re-entry	1402.56	8	175.32	5.194	.028
Frequency Re-entry	2515.485	8	289.436	2.350	.038

Tables 4.6 and 4.7 show the variables that make the strongest unique contribution to explaining the dependent variable when the variance explained by the other variables is controlled for. Social support made the strongest unique contribution in both phases of rehabilitation. This was found to be most effective in the intensity rehabilitation ( $p=0.001$ ). The other variables that made a significant unique contribution were environmental comfort ( $p<0.01$ ) also in both phases and self-presentation ( $p<0.01$ ) in the frequency phase of rehabilitation.

**Table 4.6. Coefficient  $p$  values and standardised coefficient beta values in relation to the rehabilitation phase of re-injury anxiety.**

Sources	Intensity Rehabilitation		Frequency Rehabilitation	
	Beta	$p$	Beta	$p$
Mastery	.119	.415	-.050	.712
Demonstration of Ability	.176	.215	.010	.940
Mental & Physical Preparation	-.159	.392	-.194	.265
Self-Presentation	-.041	.788	.389	.006**
Social Support	.641	.001**	.505	.003**
Vicarious Experience	-.179	.284	-.277	.079
Environmental Comfort	.468	.004**	.428	.005**
Coach/Physios Leadership	-.118	.466	-.039	.795

\*\* $p < 0.01$

Table 4.7 showed social support ( $p < 0.01$ ) and environmental comfort ( $p < 0.05$ ) made a significant unique contribution during the re-entry phase.

**Table 4.7. Coefficient  $p$  values and standardised coefficient beta values in relation to the re-entry phase of re-injury anxiety.**

Sources	Intensity Re-entry		Frequency Re-entry	
	Beta	$p$	Beta	$p$
Mastery	-.067	.674	-.167	.305
Demonstration of Ability	.156	.305	.099	.519
Mental & Physical Preparation	-.167	.413	-.177	.392
Self-Presentation	.031	.843	.135	.402
Social Support	.629	.002**	.549	.006**
Vicarious Experience	-.242	.188	-.236	.205
Environmental Comfort	.341	.047*	.291	.092
Coach/Physios Leadership	-.335	.064	-.084	.638

\* $p < 0.05$

\*\* $p < 0.01$

# **CHAPTER 5**

# **DISCUSSION**

## **5.1 Introduction:**

The purpose of this study was to investigate the relationship between sources of sport confidence and re-injury anxiety in injured athletes. Results suggested that during rehabilitation social support, environmental comfort and self-presentation were significant predictors of re-injury anxiety, whereas during re-entry social support and environmental comfort significantly predicted re-injury anxiety.

The following chapter firstly examines the differences between the sources of confidence identified by athletes with the different phases of re-injury anxiety and how this affects the return to competitive sport. This will then be followed by a conclusion of the present study which will include strengths, limitations, practical implications and recommendations for future research.

## **5.2 Intensity and Frequency Rehabilitation:**

The present study results showed that social support made the strongest individual contribution to the intensity and frequency of re-injury anxiety in rehabilitation. Lavellee and Flint (1996) found that social support alone did not significantly have an effect on the severity and frequency of the injury worries, but instead had expression of greater satisfaction with social support with a lower a level of depression. These findings are contradictory of those found in the present study as social support has been found to have a direct effect on re-injury anxiety in rehabilitation. Previous research has indicated that team mates, coaches and medical advisors can have both a positive and negative effect on an injured athlete when providing support (Urdu, 1997; Tracey, 2003). This can be dependent on the athletes perceived vs. received support (Bianco, 2001). In the present study this may have been the issue as social support was found to have a detrimental effect on the athlete's re-injury anxiety, this increased both the frequency and intensity of these cognitions. There could be two factors why athletes perceived this as negative; the amount of support received and the quality of the support received. Previous research (Johnston & Carroll, 1998b; Cupal, 1998) identified that social support from team mates, coaches and medical advisors can increase an athlete's adherence and recovery beliefs. These are contradictory to the present findings. The previous studies did not take into account the amount of social support given to the athlete, furthermore if an athlete perceives an overload of support this may increase the athlete's awareness of the injury, in result experiencing enhanced feelings of re-injury anxiety. If an athlete experiences increased cognitions of re-injury anxiety they are likely to not adhere to the rehabilitation



program (Daly, Brewer, Van Raalte, Petitpas & Sklar, 1995). Brewer (2010) suggested informational support from medical advisors increased adherence levels in a rehabilitation environment, whilst also reducing psychological factors such as re-injury anxiety. An explanation for the difference in results may be the quality of information received by the athletes. The sample in present study consisted of non-elite athletes therefore informational support would have come mostly from public hospitals and physiotherapists. This could also explain why social support increased re-injury anxiety, as athletes may not trust the support received or were not happy with the quality of support. The findings of the present study are opposite to prior studies stated above, however social support is an important source of confidence for athletes and needs to be applied correctly in order combat re-injury anxiety during rehabilitation.

Environmental comfort emerged as another significant source of confidence when athletes perceived their re-injury anxiety during rehabilitation. In contrast to results discovered in the present study Fisher, Domm and Weust (1988) and Byerly, Worrell, Gahimer and Domholdt (1994) reported that environmental conditions were the least significant variable in determining adherence, although similar results were discovered when addressing negative psychological factors experienced in a rehabilitation setting (i.e., re-injury anxiety). However these results were based on athletic trainers perceptions of their injured athlete's adherence. Environmental comfort in a rehabilitation setting was found to increase athletes' perceptions of re-injury anxiety in the present study. 'Situational variables' pertains primarily to the person's perceptions of the rehabilitation context and to non-dispositional aspects of the individual (i.e., states) that may be influenced by the rehabilitation situation. These have been linked to adherence in sport injury; a feature of this can be environmental comfort, for example 'comfort of the clinical environment' (Brewer, 1998, p72). This could be a possible explanation for the results in discussion, if an athlete were to feel uncomfortable in the environment they are completing their rehabilitation skills this may enhance re-injury anxiety. Cupal and Brewer (2001) found that athlete's post ACL surgery experienced reductions in re-injury anxiety when in an environment they feel comfortable in (i.e. physical therapy group)- thus encouraging them to relax and engage more when performing rehabilitation skills. On the other hand in relation to the present study athletes may have experienced feelings of isolation in the rehabilitation setting this would provide unwelcome reminders of perceived losses (e.g., missed sporting opportunities) as suggested by Wadey & Evans (2011). This would result

in increased pressure for athletes to recover prematurely also inducing thoughts of re-injury anxiety.

Self-presentation was the final source of confidence to be identified as significant when athletes perceived their re-injury anxiety frequency in rehabilitation. Previous literature differs when presenting results to concern an individual's perception of their body (i.e., self-presentation and self-perception) Hays et al. (2007) found no significant difference between the terms. Results found in the present study are similar to previous literature, Hanton, Fletcher and Coughlan (2005) found debilitating psychological factors when athlete's addressed their appearance "One of things that really affects me is the way I look, you know, my physique" (p1134). Self-presentation has been identified as a stressor in a competitive example. This can be transferred into a rehabilitation setting and could be a possible explanation for the increase in re-injury anxiety when athletes perceived their self-presentation. If an athlete were to be unhappy with the way they looked in rehabilitation and referred back to the physique they had pre-injury, this would act as a stressor and possibly create negative psychological cognitions (i.e., re-injury anxiety). Another possible explanation for increased re-injury anxiety on appraisal of self-presentation could be others perceptions when performing rehabilitation skills. Podlog and Eklund (2006) found that athletes had self-presentation concerns of not upholding their reputation and meeting the expectations of others. This may be an explanation for enhanced re-injury anxiety in the present study as athletes were too worried of upholding their reputation to complete the rehabilitation skill correctly.

### **5.3 Intensity and Frequency Re-entry:**

Social support was also found to be the most significant source of confidence when athletes perceived their intensity and frequency of re-injury anxiety in the re-entry phase. Johnston and Carroll (2000) postulated that those more involved in sport prior to injury may have experienced greater confusion upon re-entry into sport because they had greater information needs. In relation to the sample, all athletes participated in a similar level of sport in completion of the questionnaires, regardless of previous experience level. This therefore does not explain the results concerned. As similarly stated in rehabilitation section, social support was found to have a detrimental effect on re-injury anxiety for athletes returning to competition. This could also be explained for similar reasons, such as the amount of social support given to the athlete and the quality of the support provided. Podlog & Eklund (2007) and Podlog et al. (2011) suggested that a lack of informational

support may enhance individual's to return prematurely to competition, resulting in low self confidence in the injured site. These findings could provide an explanation for the result in discussion. Reduced support provided on return to sport in comparison to rehabilitation may leave the athlete unaware of their capabilities when first re-entering competition. As a result this could increase the intensity and frequency of athletes re-injury anxiety fears due to a lack of information on the strength and capabilities of their previously injured site. Wadey and Evans (2011) suggested that emotional support could assist to 'eradicate' re-injury anxiety, this could take form by coaches, team mates and medical professionals listening to athletes concerns and providing empathy and reassurance (p.25). However in order for emotional support to be effective, it is important for it to meet the needs of the individual (Wadey & Evans, 2011). This could have been an issue in the present study; athletes may have perceived the emotional support as others having doubt in their previously injured site. This may have led to the athlete holding back in performance and avoiding situations that could cause re-injury, which indeed is how re-injury anxiety can manifest.

As similarly found in the rehabilitation phase, environmental comfort emerged as a significant source of confidence in relation to the intensity of re-injury anxiety on return to competition. Magyar and Duda (2000) suggested that injured athletes who had high perceptions of social support (provided by trainers, parents, and teammates) identified environmental sources (e.g., environmental comfort) as an important source of confidence restoration post-injury through to returning to competition (cited in Mitchell, Evans, Rees & Hardy, 2013). However if athletes perceived social support to increase re-injury anxiety it could also provide an explanation why environmental comfort was found similarly. Reasons for this could include lack of knowledge from the coach in regards to the athletes needs on return. This may put the athlete in an uncomfortable situation on return, producing enhanced intensity of re-injury anxiety. Wadey and Evans (2011) identified simulation training as a strategy to regulate re-injury anxiety on return to sport; this could be linked to an athlete becoming comfortable in the environment before reaching pre-injury conditions. Research has suggested this could be performed by starting the athlete in a lower level match in order to build confidence, or even unopposed physical training (Evans et al., 2000; Podlog & Eklund, 2007). This may not have been applied in the present study sample due to the level of the athletes, therefore questioning the athlete's physical and psychological readiness. If an athlete were to be selected to play a competitive match

shortly after returning there is no surprise athletes rated environmental comfort to be a factor of increased intensity to re-injury anxiety.

Results in the present study also raised other interesting findings regarding sources of confidence that approached significance. Coach/physios leadership was found to be extremely close to significant ( $p=.064$ ) when tested against intensity in re-injury anxiety on return to competition. Previous research has found this source of confidence to be salient among injured athletes. Indeed Magyar and Duda (2000) found that the perceptions of a coach or athletic trainer's leadership abilities increased confidence within injured athletes. Therefore it is no surprise that the present study results approached significance when athletes perceived this as a feature to reduce re-injury anxiety on return. However it is unusual that athletes perceived social support and environmental comfort as debilitating sources of confidence in relation to re-injury anxiety and coach/physios leadership reduced the intensity of re-injury anxiety. Magyar and Duda (2000) suggested that environmental sources (i.e., social support, environmental comfort, coach/physios leadership) had a combined influential effect on the injury process regardless of an athlete's task or ego orientation. This is contradictory to the present study, and suggests that environmental sources have no combined influence in relation to an athlete's perceptions of re-injury anxiety. However coach/physios leadership was not found as significant in the present study but could be considered as an indication to future research to understand how environmental sources contribute to re-injury anxiety.

# **CHAPTER 6**

# **CONCLUSION**

## **6.1 Summary:**

To conclude, the present study investigated the relationship between the sources of confidence and re-injury anxiety in injured athletes. Athletes perceived social support and environmental comfort to have a significant effect on re-injury anxiety from rehabilitation to the return to competition. Self-presentation was also found to be significant when addressing the amount (frequency) the individual was experiencing re-injury fears. Coach/physios leadership was identified as approaching significance in the re-entry phase to combat the intensity of re-injury anxiety. These findings are contradictory of those hypothesised earlier in the study, suggesting that practitioners must be aware of the sources of confidence athletes perceive as salient when combatting re-injury anxiety and to provide a setting where this is possible. Overall the study addressed a gap in the sport injury literature; however there is additional research that needs to be completed before it can applied to the broad sporting population.

## **6.2 Strengths and Limitations:**

The present study had a number of strengths and limitations. In regards to strengths of the study; it measured the relationship of two variables that have received limited research attention in a psychological injury setting. The study also used a sample with a varying degree of injury severity, this is strength as results can be generalised to the wider sporting population. However with this strength there is also a weakness. The present study did not categorise the injury severities (i.e., high, medium, low), this is a weakness because athletes may appraise different sources of confidence to be detrimental to re-injury anxiety dependent on the severity of their injury. Previous research has suggested that injury severity has been found to affect the intensity of athletes' emotional responses to injury (Brewer, Linder & Phelps, 1995; Smith et al., 1990). This is closely linked with the fact that participants were also not categorised into injury onset, rehabilitation and return to competition when perceiving their sources of confidence and re-injury fears. Research has identified that athlete's perceptions of salient sources of confidence are likely to change over time due to personal and situational variables through the recovery process (Gallagher & Gardener, 2007; Johnston & Carroll, 2000).

Another limitation to the study was the injury history of the sample, this varied from some experiencing the same injury for the second time to individuals experiencing their first injury. Re-injury fears may be particularly salient among athletes with a history of injury to a particular body part, as they may have a heightened awareness of their physical weakness (Johnston & Carroll, 1998a). Therefore different sources of confidence may be utilised by athletes that have experienced the same injury before as they have already experienced what sources of confidence work for them and combat re-injury fears.

The final limitation of the study concerns the heterogeneity of the sample used. The sample used in the present study was heavily male dominated therefore it is questionable whether the results are reliable when applied to the sporting generalisation.

### **6.3 Practical Implications:**

A number of practical implications emerged from the study. Specifically coaches, family members, physiotherapists and team-mates should be educated in order to raise awareness of how the lack of social support can have detrimental effects on the athlete's recovery process through to return to competition (Wiese & Weiss, 1987; Williams & Roepke, 1993). This can be applied through informational support from a coach or physiotherapist to keep the athlete updated (i.e., injury progression, team updates) this in affect will increase motivation and adherence of the athlete decreasing re-injury anxiety cognitions. However when implementing any type of social support it is vital to understand that the support that is provided is that of athletes specific needs (Bianco, 2001; Tracey, 2003).

Athletes also perceived environmental comfort as significant, therefore it is important to value individuals comfort in terms of the environment to promote adherence and a successful return to sport. This can be enforced by communication with the athlete on how they feel when performing rehabilitation skills (i.e., rehabilitation timings/duration, equipment used in sessions). Another implication could be use of simulation on return to sport in order to decrease re-injury anxiety. This can be applied by walk through unopposed training, to slowly increase in intensity, until back to a competitive environment as experienced pre-injury (Wadey & Evans, 2011).

#### **6.4 Recommendations for Further Research:**

Based on the limitations stated above of the current study, there are a number of recommendations for future research. Wadey and Evans (2011) identified that is important to recognise that athlete's emotions change over the three stages of injury (onset, rehabilitation and return to competition). However further research could investigate the different sources of confidence athletes use in these stages of the injury process and how they change over time. This can then be measured against re-injury anxiety to identify what sources of confidence can reduce re-injury anxiety at different stages of injury. This can be accessed through qualitative approach to investigate into more depth why athletes find these sources of confidence salient in relation to re-injury anxiety.

Injury history and heterogeneity were also identified as limitations of the study. Future research could specify in first time injuries in a mixed gender sample and how re-injury anxiety affects the return to sport. These results may contribute significantly to the general population and also give an understanding of how re-injury anxiety may affect athletes experiencing their first injury.



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# **APPENDICES**

Appendix A  
Ethical Approval



Cardiff  
Metropolitan  
University

Prifysgol  
Metropolitan  
Caerdydd

Date: 10<sup>th</sup> March 2014

To: Luke Newman

Project reference number: 13/05/274U

Your project was recommended for approval by myself as supervisor and formally approved at the Cardiff School of Sport Research Ethics Committee meeting of 29th May 2013.

Yours sincerely

A handwritten signature in cursive script that reads "Lynne Evans".

Lynne Evans

Supervisor



Appendix B  
Participant Information Sheet

## **Participant Information Form**

**Title of Project:** The relationship between sources of confidence and re-injury anxiety among injured athletes.

**Name of Researcher:** Luke Newman

### **Background:**

The project will explore the relationship between the sources of confidence and re-injury anxiety among injured athletes. Injured athletes (N=45) will complete questionnaires that measure sources of confidence and re-injury anxiety measurement following their return to competitive sport. The findings will enhance our understanding of where injured athletes derive their confidence from during their return from injury and the relationship between these and re-injury anxiety.

### **Subject Requirements:**

To be able to become a sample in this study you must have sustained an injury in the last 5-6 months that involved an injury period of at least five weeks. You also must have been competing in competitive sport and have the intension to return to competing in competitive sport.

### **Procedure:**

Injured university athletes that comply with the sampling criteria for this study will be asked to complete the two questionnaires under the supervision of the researcher. One will be M-SSCQ (Modified Sources of Sports Confidence Questionnaire) and the other is a RIAI (Re-injury Anxiety Inventory). The data will then be collected and analysed using a correlation statistic on the software program SPSS.

### **Are there any risks?**

There are very few risks with this subject of research. The questionnaires could cut into to samples personal time so they will be administered at a time that suit the sample.

**Confidentiality:**

When the research starts no name will be recorded for data purposes, all data that is taken and analysed will remain anonymous to the person. Also data will not be discussed outside the research environment and when recorded in the dissertation participants if addressed will be known as a sample.

**Your rights:**

You have the right to stop the stop taking part in the study at any time without a given reason.

**Further information:**

If you have any further questions or queries with the study you can contact me and I will be happy to answer.

Luke Newman

Email: [St20008007@outlook.uwic.ac.uk](mailto:St20008007@outlook.uwic.ac.uk)

Phone: 07712262273

Appendix C  
Informed Consent Form

**INFORMED CONSENT FORM**

**Title of Project:** The relationship between sources of confidence and re-injury anxiety among injured athletes

**Name of Researcher:** Luke Newman

**Participant to complete this section:**                      **Please initial each box.**

- 1. I confirm that I have read and understand the information sheet for this study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.**
- 2. I understand that my participation is voluntary and that it is possible to stop taking part at any time, without giving a reason.**
- 3. I also understand that if it happens, our relationships with Cardiff Metropolitan University, or our legal rights will not be affected.**
- 4. I understand that information from the study may be used for reporting purposes, but I will not be identified.**
- 5. I agree to take part in this study on the relationship between sources of self-efficacy and return to sport from injury.**

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

Appendix D  
Demographic Information

**Demographic Information**

Age\_\_\_\_\_

Gender\_\_\_\_\_

What is your main Sport \_\_\_\_\_

Years competing\_\_\_\_\_

What is the highest level that you have competed at (e.g., International age-group, National, Regional, Club)?

\_\_\_\_\_

When did you compete at this level (highest level)?\_\_\_\_\_

What is/was the nature of the injury that you sustained?\_\_\_\_\_

\_\_\_\_\_

When did you sustain the injury?\_\_\_\_\_

Has the injury required surgery? Yes / No\_\_\_\_\_

If yes what was the date of your surgery?\_\_\_\_\_

Have you already returned to competitive sport post-injury? Yes / No\_\_\_\_\_

When did you return to competitive sport post-injury? \_\_\_\_\_

How long do you anticipate/did the injury prevent you from competing in your main sport?

\_\_\_\_\_

\_\_\_\_\_

Could you tell us about any previous injuries - i.e., previous injuries that you sustained, when, and how long they kept you out of sport.

\_\_\_\_\_

\_\_\_\_\_

Do you have private medical health cover? Yes/No \_\_\_\_\_

## Appendix E

### Modified Sources of Sport Confidence Questionnaire



## The Modified Sources of Sport-Confidence Questionnaire

### Athlete Self-Rating Scale (SSCQ)

We are interested in learning about things that help **YOU** be self-confident when participating in your **rehabilitation program**. Listed below are some things that may help/have helped athletes feel confident during rehabilitation. **Please circle the extent to which each statement reflects your current/past rehabilitation experience.** Please respond to every statement even though they may appear repetitive. There are no right or wrong answers because each athlete is different. Please be honest- your answers will be completely confidential.

**I usually gain/gained (as appropriate) confidence in my rehabilitation programme from...**

		Not at all			Sometimes			Always	
1	Getting positive feedback from my teammates and/or friends	0	1	2	3	4	5	6	7
2	Completing rehabilitation exercises faster than others	0	1	2	3	4	5	6	7
3	Keeping my focus on the task	0	1	2	3	4	5	6	7
4	Psyching myself up	0	1	2	3	4	5	6	7
5	Mastering a new skill in rehabilitation	0	1	2	3	4	5	6	7
6	Getting breaks from my physiotherapist	0	1	2	3	4	5	6	7
7	Performing in a rehabilitation environment that I like and in which I feel comfortable	0	1	2	3	4	5	6	7
8	Feeling good about my weight.	0	1	2	3	4	5	6	7
9	Believing in my physiotherapist's abilities	0	1	2	3	4	5	6	7
10	Knowing I have support from others that are important to me	0	1	2	3	4	5	6	7
11	Demonstrating that I am better than others	0	1	2	3	4	5	6	7
12	Seeing successful rehabilitation performances by other athletes	0	1	2	3	4	5	6	7
13	Knowing that I am mentally prepared for the situation.	0	1	2	3	4	5	6	7
14	Following certain rituals (e.g. wearing a lucky shirt, eating certain foods etc.)	0	1	2	3	4	5	6	7
15	Improving my performance on a skill in rehabilitation	0	1	2	3	4	5	6	7
16	Seeing the breaks are going my way	0	1	2	3	4	5	6	7
17	Feeling that I look good	0	1	2	3	4	5	6	7
18	Knowing my physiotherapist will make good decisions	0	1	2	3	4	5	6	7
19	Being told that others believe in me and my abilities	0	1	2	3	4	5	6	7
20	Showing my ability by doing my best in rehabilitation	0	1	2	3	4	5	6	7
21	Watching another athlete I admire perform a rehabilitation skill	0	1	2	3	4	5	6	7
22	Staying focused on my goals	0	1	2	3	4	5	6	7
23	Improving my rehabilitation skills	0	1	2	3	4	5	6	7
24	Feeling comfortable in the rehabilitation environment in which I am performing	0	1	2	3	4	5	6	7
25	Feeling that everything is "going right" for me in that situation	0	1	2	3	4	5	6	7
26	Feeling as though my body looks good	0	1	2	3	4	5	6	7
27	Knowing my coach is a good leader	0	1	2	3	4	5	6	7

**I usually gain/gained (as appropriate) confidence in my rehabilitation programme from...**

		Not at all			Sometimes			Always	
		0	1	2	3	4	5	6	7
28	Being encouraged by physiotherapist and/or family	0	1	2	3	4	5	6	7
29	Knowing I can outperform others on rehabilitation exercises	0	1	2	3	4	5	6	7
30	Watching a teammate successfully perform rehabilitation exercises	0	1	2	3	4	5	6	7
31	Preparing myself physically and mentally for a situation	0	1	2	3	4	5	6	7
32	Increasing the number of rehabilitation skills I can perform	0	1	2	3	4	5	6	7
33	Liking the environment where I am performing	0	1	2	3	4	5	6	7
34	Having trust in my physiotherapist's decisions	0	1	2	3	4	5	6	7
35	Getting positive feedback from physiotherapist and/or family	0	1	2	3	4	5	6	7
36	Proving I am better than others in rehabilitation	0	1	2	3	4	5	6	7
37	Seeing a friend perform rehabilitation successfully	0	1	2	3	4	5	6	7
38	Believing in my ability to give maximum effort to complete my rehabilitation program	0	1	2	3	4	5	6	7
39	Receiving support and encouragement from others	0	1	2	3	4	5	6	7
40	Showing I am one of the best in rehabilitation	0	1	2	3	4	5	6	7
41	Watching my teammates who are at my level perform well	0	1	2	3	4	5	6	7
42	Developing new skills and improving	0	1	2	3	4	5	6	7
43	Feeling my physiotherapist provides effective leadership	0	1	2	3	4	5	6	7

Appendix F  
Re-injury Anxiety Inventory

**RE-INJURY ANXIETY**

Below are a number of statements about re-injury worries that athletes may experience during rehabilitation and return to competition. Read each statement and circle the appropriate number to indicate how you feel right now. For each statement first rate how much (i.e., level) of the symptom you experienced, and then rate the frequency (i.e., how often) of these symptoms.

		LEVEL (HOW MUCH)				FREQUENCY (HOW OFTEN)						
		Not at all	Some-what	Moderately so	Very much so	Never						All the time
		0	1	2	3	1	2	3	4	5	6	7
1	I am/was worried about becoming re-injured during rehabilitation	0	1	2	3	1	2	3	4	5	6	7
2	I feel/felt nervous about becoming re-injured during rehabilitation	0	1	2	3	1	2	3	4	5	6	7
3	I have/had doubts that I will remain injury free during rehabilitation	0	1	2	3	1	2	3	4	5	6	7
4	I feel/felt on edge about becoming re-injured during rehabilitation	0	1	2	3	1	2	3	4	5	6	7
5	I am/was worried that I may not do as well as I could in rehabilitation due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
6	My body feels/felt tense about rehabilitation because of re-injury worries	0	1	2	3	1	2	3	4	5	6	7
7	I am/was worried about failing during rehabilitation due to my re-injury worries	0	1	2	3	1	2	3	4	5	6	7
8	Re-injury worries about rehabilitation make my body feel tense	0	1	2	3	1	2	3	4	5	6	7
9	I am/was worried about performing poorly during rehabilitation due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
10	I feel/felt my stomach sinking due to re-injury worries during rehabilitation	0	1	2	3	1	2	3	4	5	6	7
11	I am/was confident about not becoming re-injured during rehabilitation because I mentally picture myself staying injury free	0	1	2	3	1	2	3	4	5	6	7
12	I am/was worried about concentrating during rehabilitation because of re-injury worries	0	1	2	3	1	2	3	4	5	6	7
13	My body feels/felt tight due to re-injury worries during rehabilitation	0	1	2	3	1	2	3	4	5	6	7

		LEVEL (HOW MUCH)				FREQUENCY (HOW OFTEN)						
		Not at all	Some-what	Moderately so	Very much so	Never						All the time
		0	1	2	3	1	2	3	4	5	6	7
14	I am/was worried about becoming re-injured during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
15	I feel/felt nervous about becoming re-injured during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
16	I have/had doubts that I will remain injury free during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
17	I feel/felt on edge about becoming re-injured during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
18	I am/was worried that I may not do as well as I could on returning returning to competition due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
19	My body feels/felt tense about re-entering competition because of my re-injury worries	0	1	2	3	1	2	3	4	5	6	7
20	I feel/felt confident that I will not become re-injured during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
21	I am/was worried about failing when re-entering into competition due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
22	Re-injury worries about re-entry into competition make/made my body feel tense	0	1	2	3	1	2	3	4	5	6	7
23	I am/was worried about performing poorly during re-entry into competition due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
24	I am/was worried about failing to achieve full re-entry into competition due to re-injury worries	0	1	2	3	1	2	3	4	5	6	7
25	I am/was worried that others will be disappointed if I become re-injured during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7
26	The thought of re-injury during re-entry into competition makes/made my palms sweaty	0	1	2	3	1	2	3	4	5	6	7
27	I am/was worried about concentrating during re-entry into competition because of re-injury worries	0	1	2	3	1	2	3	4	5	6	7
28	My body feels/felt tight due to re-injury worries during re-entry into competition	0	1	2	3	1	2	3	4	5	6	7