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 Empirical <sup>1</sup>

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| <b>Student name:</b>       | Rebekah Hadley  | <b>Student ID:</b> | St20005152 |
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| <b>Supervisor:</b>         | Lynne Evans   |                    |            |

  

| Comments | Section  |
|----------|--|
|          | <b>Title and Abstract (5%)</b><br>Title to include: A concise indication of the research question/problem.<br>Abstract to include: A concise summary of the empirical study undertaken.  |
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**Prifysgol Fetropolitan Caerdydd**

**CARDIFF SCHOOL OF SPORT**

**DEGREE OF BACHELOR OF SCIENCE (HONOURS)**

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**SOURCES OF CONFIDENCE AND RE-INJURY ANXIETY  
IN INJURED ATHLETES RETURNING TO SPORT**

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

**REBEKAH HADLEY**

**20005152**

# **SOURCES OF CONFIDENCE AND RE-INJURY ANXIETY IN INJURED ATHLETES RETURNING TO SPORT**

Cardiff Metropolitan University  
Prifysgol Fetropolitan Caerdydd

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# CONTENTS

|                                       |           |
|---------------------------------------|-----------|
| List of tables                        |           |
| Acknowledgements                      | i         |
| Abstract                              | ii        |
| <b>CHAPTER 1: INTRODUCTION</b>        | <b>1</b>  |
| 1.0 Introduction                      | 2         |
| <b>CHAPTER 2: LITERATURE REVIEW</b>   | <b>3</b>  |
| 2.1 Injury in Athletes                | 4         |
| 2.2 Psychological Responses to Injury | 4         |
| 2.3 Re-injury Anxiety                 | 5         |
| 2.4 Self-Confidence and Self-Efficacy | 6         |
| 2.5 Sources of Sport-Confidence       | 8         |
| <b>CHAPTER 3: METHODOLOGY</b>         | <b>10</b> |
| 3.1 Participants                      | 11        |
| 3.2 Measures                          | 11        |
| 3.3 Procedures                        | 12        |
| 3.4 Data Analysis                     | 12        |
| <b>CHAPTER 4: RESULTS</b>             | <b>13</b> |
| 4.1 Data Analysis                     | 14        |
| 4.2 Scale Reliability                 | 14        |
| 4.3 Confirming Underlying Assumptions | 15        |
| 4.4 Model Summary and One way ANOVA   | 15        |
| 4.5 Multiple Regression Analysis      | 17        |

**CHAPTER 5: DISCUSSION** 19

|   |    |
|---|----|
| 5.1 Introduction                                | 20 |
| 5.2 Sources of Confidence and Re-injury anxiety | 20 |
| 5.3 Strengths and Limitations                   | 23 |
| 5.4 Practical Implications                      | 24 |
| 5.5 Recommendations for Future Research         | 25 |
| 5.6 Conclusion                                  | 26 |

**REFERENCE LIST** 27

**APPENDICES** 32

Appendix A – Ethics Status

Appendix B- Participant Information Sheet

Appendix C- Informed Consent Form

Appendix D- Demographic Information Sheet

Appendix E- Modified Sources of Sport-Confidence Questionnaire

Appendix F- Re-injury Anxiety Inventory Questionnaire

## Tables

|   |    |
|---|----|
| Table 1.0   | 14 |
| Cronbach's alpha ( $\alpha$ ) Coefficient results                                       |    |
| Table 2.0   | 15 |
| Model summary for rehabilitation re-injury anxiety                                      |    |
| Table 3.0   | 16 |
| One way ANOVA of rehabilitation re-injury anxiety                                       |    |
| Table 4.0   | 16 |
| Model summary for re-entry into competition re-injury Anxiety                           |    |
| Table 5.0   | 16 |
| One way ANOVA of re-entry into competition re-injury anxiety                            |    |
| Table 6.0   | 17 |
| Significance between rehabilitation re-injury anxiety and the nine subscales of M-SSCQ. |    |
| Table 7.0   | 18 |
| Significance between re-entry re-injury anxiety and the nine subscales of M-SSCQ        |    |



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## **ABSTRACT**

The aim of the present study was to investigate the relationship between sources of sport confidence and re-injury anxiety. Currently injured athletes (N=30) completed the Modified Sources of Sport Confidence Questionnaire (M-SSCQ; Magyar and Duda, 2000) and Re-Injury Anxiety Inventory (RIAI; Walker, Thatcher and Lavallee 2010). A multiple regression analysis was conducted to determine the relationship between the sources of sport confidence and re-injury anxiety, during both rehabilitation and re-entry into competition phases. The results of the multiple regression analysis indicated a significant relationship between both demonstration of ability ( $p<0.05$ ) and mastery ( $p<0.05$ ) sources and re-injury anxiety during the re-entry into competition phase. No significant relationship was found between any of the sources and re-injury anxiety during the rehabilitation phase. These findings suggest that only demonstration of ability and mastery sources of confidence effect levels of re-injury anxiety in athletes.

# **CHAPTER 1**

## **INTRODUCTION**

## 1.1 Introduction

The majority of athletes are likely to sustain an injury throughout a competitive career, most often seen as a traumatic event. In addition to the evident physiological aspects of injury, a number of psychological reactions are produced (Green and Weinberg, 2001). The psychological issues athletes are likely to experience are largely determined by an individual's self-appraisal of the situation (Green and Weinberg, 2001) and their ability to cope. The rate of which athletes' physiologically recover is unlikely to correspond with the rate of psychological recovery, causing a delay in the return to sport.

Concepts of both self-confidence and anxiety are found to play a huge role during the recovery process of injury, highly influencing whether an athletes' return to sport is successful or not. Research into this area of sport psychology has increased over the last few years, with a substantial focus upon self-confidence (Vealey et al 1998, Magyar and Duda, 2000; Hay's et al. 2007). Self-confidence is found to influence athletes' emotional and behavioural responses during injury (Wadey and Evans, 2011). The increased focus upon self-confidence in recent literature has been conducted from an injury perspective, based upon both self-efficacy sources (Bandura, 1997) and sources of sport-confidence (Vealey et al. 1998).

In addition to this importance related upon self-confidence, research suggests other psychological factors that are found to impact injury recovery. Another factor suggested to be importance with regards to injury is re-injury anxiety. Current research focused upon re-injury anxiety during the injury process is limited, however it is suggested to highly influence an athletes' successful return to sport. Increased levels of re-injury anxiety are found to cause undesirable responses, such as negative emotions a decrease in effort from the athlete (Heil, 1993).

Due to the limited literature into this area of re-injury anxiety during injury, the purpose of the present study is to expand upon further knowledge regarding this factor. Findings will help support future athletes experiencing re-injury anxiety to successfully return to sport. In order for this outcome to occur it is important that medical practitioners in the psychology field become more knowledgeable, with regards to the various psychological challenges athletes may face. This study will aim to investigate the relationship between sources of sport-confidence and re-injury anxiety, during rehabilitation and upon returning to sport.

# **CHAPTER 2**

## **LITERATURE REVIEW**

## **2.1 Injury in Athletes**

The injury process has three clear phases including onset, rehabilitation and return to sport. During these phases injured athletes' are likely to experience a variety of emotional responses such as shock, frustration and depression. The area of research into injury and the related psychological issues within is growing rapidly in the sports psychology literature. Researchers have established numerous psychological effects caused by injury, as well as recognising a number of psychological factors that determine an athletes' successful return to sport. The majority of research into injury places a great focus into the physical aspects of rehabilitation (Podlog, Dimmock and Miller, 2010), disregarding the importance of psychological aspects. However, recently the literature focusing on injury from a psychological perspective has increased, thus identifying a number of psychological issues as essential components related to injury recovery (Wadey and Evans, 2011). Although research into this area of sports psychology has increased over the last few years (Walker, Thatcher, Lavalley and Golby, 2004), it has predominantly focused upon sport-confidence without taking into consideration a number of other psychological factors. Therefore, the knowledge into injury in sport with regards to factors such as confidence restoration and re-injury anxiety effects is lacking.

## **2.2 Psychological Responses to Injury**

A number of psychological factors occur as the result of injury. Throughout the injury process athletes experience a transitional change in both cognitions and emotions. According to Wadey and Evans (2011) these responses follow a temporal pattern with varied feelings experienced along the injury process. Injury has three phases including onset, rehabilitation and return to sport. During this pathway the range of emotions an athlete will experience depends upon both injury appraisal (Green and Weinberg, 2001) and related stressors (Mitchell, 2011).

Research suggests that the most essential component related to psychological recovery is a performer's cognitive response. This cognitive response will affect an athlete's self-perception, therefore influencing both emotional and behavioural responses (Wiese-Bjornstal et al., 1998). As previously stated by Green and Weinberg (2001) the emotions experienced along the injury pathway are determined by self-appraisals. These include the athlete's own perceptions about the cause of injury, recovery status, their perceived availability of social support and their ability to cope with the injury experience.

In order to highlight psychological responses to injury, Wiese-Bjornstal et al. (1998) proposed an integrated model of psychological response. This integrated pre-injury factors such as personality, history of stressors and coping resources, with post-injury factors such as severity of injury, social support and rehabilitation environment. The model represents the contribution of numerous factors and how the role of appraisal influences both emotional responses and behavioural outcomes. As an athlete's cognitive appraisals change over time, emotional responses and behaviour also change demonstrating a temporal pattern (Wadey and Evans, 2011).

### **2.3 Re-injury Anxiety**

It is common for injured athletes returning to sport to experience concerns about re-injury, recognised as re-injury anxiety in the sports psychology literature (Reese, Pittsinger and Yang, 2012). Research concerning the effects of this psychological factor during injury is limited; however it has been identified as an important characteristic impacting upon returning to sport. Research suggests that re-injury concerns become evident during the more advanced phases of injury, when athletes progress to returning to sport (Bianco, 2001; Kvist et al., 2005, Podlog and Eklund, 2006). Common signs that athletes are experiencing re-injury anxiety include, increased negative emotions at the completion of rehabilitation, limited efforts delaying the rehabilitation progress and hesitation of sport specific skills within an athletes' capability (Heil, 1993).

Research suggests a number of psychological responses influenced by re-injury anxiety. This psychological factor is found to represent a substantial hindrance for athletes returning to sport; acting as a salient apprehension among athletes (Kvist et al., 2005). In addition, it has been recognised to prevent otherwise healthy athletes from ever returning to sport. As well as hindering an athlete's return to sport, post-injury performance is found to be impacted upon by re-injury anxiety. Research suggests that it may influence an athletes' attentional focus, leading to senses of hesitation during performance (Carey, Huffman, Parekh, and Sennett, 2006). Athletes who experience greater levels of re-injury anxiety are also found to have a greater perception of threat, disrupting attentional focus and reducing peripheral vision (Podlog et al., 2011). Another psychological factor impacted upon by re-injury anxiety is the fear of re-injury. According to Johnston and Carroll (1998) this is the most predominant emotion related to returning to sport, likely to result in both skill based and interpretive psychological changes (Walker et al., 2010). For example, a decrease in the level of an athlete's concentration may cause distraction from specific tasks (Heil, 1993). In addition to psychological factors, research suggests a number of

physiological factors influenced by re-injury anxiety. These changes include muscular fatigue, neuromuscular changes, increased muscular tension and over arousal (Heil, 1993).

An evident link between an athletes' level of re-injury anxiety and the increased predisposition of actual re-injury has been revealed during a number of studies (Heil, 1993). Research suggests that the likelihood of further or re-injury in athletes returning to sport is found to be affected by a combination of both the psychological and physiological factors caused by re-injury anxiety. Williams and Anderson (1998) highlighted this relationship by proposing a stress injury model suggesting a combination of factors likely to trigger re-injury. This model describes how an athletes' appraisal of threat in a specific stressful situation may lead to physiological changes such as muscle fatigue, thus in turn impacting upon timing and co-ordination and increasing the likelihood of injury.

## **2.4 Self-Confidence and Self-efficacy**

According to Vealey and Chase (2008), Sports confidence is identified as the most important psychological factor influencing sports performance. Self-confidence and self-efficacy share considerable conceptual overlap (Vealey, 1986) and are identified as important influences on athletic performance (Vealey, 2001). Self-confidence is defined as the beliefs in an individual's capability to be successful in sport (Vealey, 1986). Self-efficacy is concerned with the performers' perceptions of their ability to succeed in a given situation, at a given time (Hardy, Jones and Gould, 1996); defined as a belief in ones capability to plan and execute a task proficiently (Bandura, 1997).

An athletes' most likely cognitive response to injury is a decrease in both self-confidence and self-efficacy (Bandura, 1990). This is found to inhibit a successful return to sport (Magyar and Duda, 2000). Therefore recent research has attempted to focus upon important factors, such as confidence restoration (Bandura, 1997; Magyar and Duda, 2000). Magyar and Duda (2000) investigated the relationship between sources of confidence and confidence restoration, suggesting that the most salient sources are coach's leadership and environmental comfort. In addition, during task orientation both mastery and demonstration of ability were identified as important. Research suggests that the selection of certain sources by athletes is determined by a number of factors, such as differences in perceptions of success and goal orientations (Magyar and Duda, 2000). How an individual perceives their efficacy influences how they reiterate certain



scenarios, thus in turn impacting on their performance in either a positive or negative manner (Bandura, 1997). There is a widespread support for Bandura's self-efficacy theory, representing the areas athletes are most likely to derive their efficacy. Bandura's theory suggests that the most salient source of efficacy is performance accomplishments, due to the fact they are based on an individual's mastery experiences (Bandura, 1997). This is supported by Vealey and Chase (2008), who suggest that in general mastery experiences tend to appear as the strongest sources of confidence for athletes in various sporting contexts. Individuals who constantly view their mastery experiences as successful are likely to have increased self-efficacy beliefs, whereas negative views will cause a decrease in their beliefs.

Bandura's (1977) self-efficacy theory is based upon general self-confidence, rather than sport-specific confidence. Therefore, Vealey (1986) proposed the integrative model of sport confidence, focusing upon sport specific self-confidence. This model conceptualised sport-confidence into two components; (SC-trait) and (SC-state) and includes the construct of competitive orientation. This construct is represented specifically by performance orientation and outcome orientation. This model predicts that SC-trait and competitive orientation interact to influence SC-state (Vealey 1986; Vealey et al., 1998). However, a number of limitations were identified in Vealey's (1986) model of sport confidence. One of the weaknesses included a limited amount of support from other findings, whereby no significant relationship was identified between competitive orientation and SC-state (Martin and Gill, 1991).

Due to the weaknesses proposed in Vealey's (1986) original model, it was reconceptualised into a more advanced framework produced by (Vealey et al., 1998). This reconceptualised model is multidimensional in nature, focusing upon nine sources of sports confidence, whilst disregarding both SC-trait and SC-state constructs. Unlike the previous model, it takes into consideration the influences of athlete characteristics and organisational cultures upon sources and sport-confidence. Vealey's (2001) most recent model is based upon a social cognitive perspective, considering a number of factors that influence the development of confidence in athletes. In addition, it takes into account the three domains surrounding sources of confidence including achievement, self-regulation and social climate.

## **2.5 Sources of Sport-Confidence**

Research within this area of sports psychology has largely been grounded within the theoretical framework of the social cognitive framework (Vealey, 1986). Bandura (1990) recognised the importance of self-efficacy in a sporting context, describing six sources of information underpinning efficacy. These include performance accomplishments, vicarious experience, verbal persuasion, imaginal experience and perceptions of emotional and physiological states. Research suggests that levels of self-confidence, behaviour and cognitions are found to be critically based upon Vealey et al. (1998) nine sources of sport confidence. These include mastery, demonstration of ability, physical self-presentation, coach's leadership, physical/mental preparation, social support, environmental comfort, situational favourableness and vicarious experience.

Research suggests that the most salient source of self-efficacy is performance accomplishments (Vealey et al., 1998). According to Vealey et al. (1998), performance accomplishments are suggested to take many forms in sport, viewed by athletes as separate sources for sport-confidence. Vicarious experience is found to be a weaker source of efficacy information than performance accomplishments (Feltz et al., 2008). Vicarious experience consists of a modelling process involving observing the performance of other individuals, then using this to form judgements about one's own performance of a task (Bandura, 1997). Verbal persuasion helps to motivate people continue with their efforts if an appraisal is realistic. Feltz et al. (2008) suggested verbal persuasion as the most effective technique to increase efficacy beliefs. Lastly, the impact of physiological states on self-efficacy is determined by several factors, including situational factors (Bandura, 1997). This source is used to form judgements by cognitively appraising one's physiological state.

Clear links are recognised between Bandura's self-efficacy beliefs and Vealey's sources of sport-confidence (Vealey and Chase, 2008). In order to measure Vealey's sources of sport-confidence specific to a sporting setting, Vealey et al. (1998) developed the sources of sport confidence questionnaire (SSCQ) (Feltz et al., 2008). Vealey et al. (1998) took into consideration the most important sources where athletes are most likely to derive confidence. Findings from this study identified the top five sources ranked by athletes including mastery, social support, physical/mental preparation, demonstration of ability and physical self-presentation.

Current research has focused primarily on the relationship between sources of sport-confidence and self-confidence, establishing a significant relationship between these factors. However, research into the relationship between these sources and other various psychological factors is

limited. Although some research has identified the detrimental effects caused by increased levels of re-injury anxiety during injury (Podlog and Eklund, 2006; Podlog et al., 2011), little research has focused upon how athlete's manage re-injury anxiety in order to reducing its effects. Therefore, this study will look to investigate the relationship between sources of sport confidence and re-injury anxiety, highlighting the significance of the relationship between Vealey's sources and this psychological factor. The findings will aim to increase the knowledge and understanding into the area of re-injury anxiety, providing further knowledge for future practitioners and coaches when working with injured athletes.

## **CHAPTER 3**

# **METHODOLOGY**

### **3.1 Participants**

Participants comprised a purposeful sample of N=30 athletes. They were required to meet a number of criteria (a) must be currently injured; and (b) must have been injured for three weeks or more. Athletes ranged between the ages of 18-45 with a mean and standard deviation of (23.57± 5.54). Injuries sustained included ankle and knee ligament ruptures, broken bones and spinal injuries. In terms of injury severity, duration ranged from 6 weeks to 14 months, whilst some injuries were classed as ongoing. The sports that participants competed in included football, hockey and athletics.

### **3.2 Measures**

#### **Sources of Sport-Confidence Questionnaire (SSCQ)**

Magyar and Duda's (2000) modified sources of sport-confidence questionnaire (M-SSCQ) was used during the study, in order to identify the participants' sources of confidence information. The questions examine the athlete's sources of confidence specific to returning from injury. The M-SSCQ consists of 43 items and is made up of 9 subscales. Subscales include demonstration of ability, mastery, physical self-presentation, social support, coach's leadership physical/mental preparation, vicarious experience, environmental comfort and situational favourableness. These scales range between numbers 0 and 100. 0 represents athletes having no confidence, whilst 100 represents complete confidence. Participants rate their personal level of confidence regarding each item.

#### **Re-Injury Anxiety Inventory (RIAI)**

The re-injury anxiety inventory (RIAI) questionnaire proposed by Walker, Thatcher and Lavallee (2010) was used as another qualitative measure during the study. This inventory was used to identify the participants' perceived anxiety about re-injury, during both injury rehabilitation and when returning to competition. The RIAI is made up of 28 items and for each item athletes rate their anxiety levels on a scale between 0 and 3. On the scale, 0 represents the answer 'not at all', whilst 3 represents 'the answer 'very much so'.

### **3.3 Procedures**

Participants were provided with a consent form in order to gain their approval to participate in the study. Following this approval individuals who met the sufficient requirements of the study were selected to participate. Before any participation into the study, athletes were informed about their rights of involvement such as the right of withdrawal at any point. Participants were then required to complete the Modified sources of sport-Confidence Questionnaire (M-SSCQ) and the Re-injury anxiety Inventory (RIAI). All information provided by the participants was kept anonymous and confidential, with the exception of the researcher conducting the study.

### **2.4 Data Analysis**

Prior to conducting the multiple regression analysis, an internal reliability analysis of the nine sources of sport confidence was completed. Cronbach's alpha was calculated to assess the internal consistency of the 9 M-SSCQ subscales. Each sub-scale had a Cronbach's alpha value above .7 showing a good reliability (cf, Nunnally, 1978). A one way analysis of variance (ANOVA) was used to determine if there were any significant differences between sources of confidence and re-injury anxiety variables. Multiple regression analysis was conducted to explore the relationship between the independent (M-SSCQ subscales) and dependent (re-injury anxiety) variables, including rehabilitation and re-entry into sport re-injury anxiety. The analysis measured the relationship between each M-SSCQ subscale and re-injury anxiety intensity subscales, identifying any statistical significance represented with a value of ( $p < .05$ ). All underlying assumptions were tested prior to the analysis to ensure results were as accurate as possible. Data analysis was conducted with the use of the IBM SPSS Software, Version 20.

# **CHAPTER 4**

## **RESULTS**

## 4.1 Data Analysis

Prior to conducting the multiple regression analysis, Cronbach's alpha was calculated to assess the internal consistency of the M-SSCQ subscales. Subsequently multiple regression was used to explore the relationship between the independent (M-SSCQ subscales) and dependent (re-injury anxiety) variables.

## 4.2 Scale Reliability

The internal consistency for each M-SSCQ subscale was calculated using Cronbach's alpha ( $\alpha$ ). Cronbach's alpha ( $\alpha$ ) scores for the nine subscales ranged from .76 to .91. Table 1.0 shows the reliability scores for each M-SSCQ subscale.

**Table 1.0** Cronbach's alpha ( $\alpha$ ) Coefficient results

| Sources of sport-confidence     | Cronbach's Alpha ( $\alpha$ ) |
|---------------------------------|-------------------------------|
| Mastery                         | 0.76                          |
| Demonstration of ability        | 0.85                          |
| Mental and Physical Preparation | 0.84                          |
| Physical and Self Presentation  | 0.85                          |
| Social Support                  | 0.87                          |
| Vicarious Experience            | 0.91                          |
| Environmental Comfort           | 0.76                          |
| Situational Favourableness      | 0.78                          |
| Leadership                      | 0.88                          |



### 4.3 Confirming Underlying Assumptions

All underlying assumptions were tested before performing the multiple regression analysis. Levene's test of homogeneity of variance was non-significant ( $p > .05$ ) for all subscales, suggesting the assumption of homogeneity were met (Field, 2009). Skewness and Kurtosis methods were used to test the assumption of normality, confirming the assumptions of normality for each subscale had been met. Lastly, correlation assumptions for multicollinearity and linearity between variables were met with the use of correlation coefficients and scatter plots.

### 4.4 Model Summary and One way ANOVA

Model summary tables for predictor variables (rehabilitation re-injury anxiety and re-entry into competition anxiety) are represented showing the R values, R square values, adjusted R square values and Standard error of the estimate values. Table 2.0 represents rehabilitation re-injury anxiety. Table 4.0 represents re-entry into competition re-injury anxiety. One way ANOVA analysis tables are demonstrated, showing the total sum of squares value, degrees of freedom, F value and significance value ( $p > 0.05$ ). Table 3.0 represents the ANOVA for rehabilitation re-injury anxiety; and Table 5.0 represents re-entry into competition.

**Table 2.0** Model summary for rehabilitation re-injury anxiety

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .550 <sup>a</sup> | .302     | -.012             | 10.61177                   |

**Table 3.0** One way ANOVA of rehabilitation re-injury anxiety

| Model      | Sum of squares | Df | Mean square | F    | Sig.              |
|------------|----------------|----|-------------|------|-------------------|
| Regression | 975.272        | 9  | 108.364     | .962 | .498 <sup>b</sup> |
| Residual   | 2252.194       | 20 | 112.610     |      |                   |
| Total      | 3227.467       | 29 |             |      |                   |

**Table 4.0** Model summary for re-entry into competition re-injury Anxiety

| Model | R                 | R Square | Adjusted Square | R | Std. Error of the Estimate |
|-------|-------------------|----------|-----------------|---|----------------------------|
| 1     | .681 <sup>a</sup> | .464     | .223            |   | 11.33538                   |

**Table 5.0** One way ANOVA of re-entry into competition re-injury anxiety

| Model      | Sum of squares | Df | Mean square | F     | Sig.              |
|------------|----------------|----|-------------|-------|-------------------|
| Regression | 2222.851       | 9  | 246.983     | 1.922 | .107 <sup>b</sup> |
| Residual   | 2569.816       | 20 | 128.491     |       |                   |
| Total      | 4792.667       | 29 |             |       |                   |

## 4.5 Multiple Regression Analysis

Multiple regression analysis was conducted on the relationship between predictor variables (rehabilitation re-injury anxiety and re-entry into competition anxiety) and outcome variables (M-SCCQ subscales). Table 7.0 shows the results for re-entry anxiety, suggesting that two sources contributed significantly ( $p < .05$ ) to the variance in the dependent variable. Specifically, demonstration of ability made the strongest contribution to the variance in the dependent variable at (.464 %), with mastery also making a significant contribution. These results are represented above in table 4.0. Table 6.0 and table 7.0 show both standardised and unstandardized coefficients.

**Table 6.0** Significance between rehabilitation re-injury anxiety and the nine subscales of M-SSCQ.

| Model                           | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|---------------------------------|-----------------------------|------------|---------------------------|--------|------|
|                                 | B                           | Std. Error | Beta                      |        |      |
| (Constant)                      | -14.998                     | 14.937     |                           | -1.004 | .327 |
| Mastery                         | 9.590                       | 6.154      | .831                      | 1.558  | .135 |
| Demonstration of Ability        | -3.682                      | 2.942      | -.496                     | -1.251 | .225 |
| Mental and Physical Preparation | 2.067                       | 3.202      | .219                      | .646   | .526 |
| Physical Self-presentation      | 2.769                       | 2.268      | .449                      | 1.221  | .236 |
| Social Support                  | -.506                       | 4.366      | -.062                     | -.116  | .909 |
| Vicarious Experience            | -.600                       | 2.167      | -.089                     | -.277  | .785 |
| Environmental comfort           | -3.393                      | 5.067      | -.400                     | -.670  | .511 |
| Situational Favourableness      | 2.056                       | 2.664      | .272                      | .772   | .449 |
| Leadership                      | -1.927                      | 3.098      | -.267                     | -.622  | .541 |

a. Dependent Variable: rehabilitation

b. NOTE \* = Significant difference;  $p < .05$

**Table 7.0** Significance between re-entry re-injury anxiety and the nine subscales of M-SSCQ

| Model                           | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  |
|---------------------------------|-----------------------------|------------|---------------------------|--------|-------|
|                                 | B                           | Std. Error | Beta                      |        |       |
| (Constant)                      | -15.965                     | 15.956     |                           | -1.001 | .329  |
| Mastery                         | 14.603                      | 6.574      | 1.038                     | 2.221  | .038* |
| Demonstration of Ability        | -8.392                      | 3.143      | -.927                     | -2.670 | .015* |
| Mental and Physical Preparation | 2.127                       | 3.420      | .185                      | .622   | .541  |
| Physical Self-presentation      | 4.940                       | 2.423      | .657                      | 2.039  | .055  |
| Social Support                  | -.871                       | 4.664      | -.087                     | -.187  | .854  |
| Vicarious Experience            | -.094                       | 2.315      | -.011                     | -.041  | .968  |
| Environmental comfort           | -4.828                      | 5.412      | -.467                     | -.892  | .383  |
| Situational Favourableness      | 4.006                       | 2.846      | .435                      | 1.408  | .175  |
| Leadership                      | -3.926                      | 3.309      | -.447                     | -1.186 | .249  |

a. Dependent Variable: re-entry re-injury anxiety

b. NOTE \*= Significant difference;  $p < .05$

## **CHAPTER 5**

### **DISCUSSION**

## **5.1 Introduction**

The present study aimed to investigate the relationship between sources of sport confidence and levels of re-injury anxiety during injury. Results showed that two of the nine sources of confidence (demonstration of ability and mastery) were significant predictors of re-injury anxiety, during re-entry into competition. However none of the sources of confidence significantly predicted re-injury anxiety during rehabilitation.

The following chapter will provide a discussion of the results obtained, followed by a discussion of the strengths and limitations and practical implications of the study. Future recommendations for research into this area will be noted, ending with a final conclusion of the study.

## **5.2 Sources of Confidence and Re-injury Anxiety**

Results identified demonstration of ability and mastery to be the most significantly related sources of confidence with re-injury anxiety. These sources were the only ones significantly related to re-injury anxiety during re-entry into competition and rehabilitation. The findings show that as the significance of mastery increases, re-injury anxiety increases, representing a positive relationship. However as the significance of demonstration of ability increases, re-injury anxiety was found to decrease showing a negative relationship. These performance related sources fall under the achievement domain (Vealey et al., 1998). Research suggests that both mastery and demonstration of ability may be affected by numerous factors including athlete characteristics, organisational factors and time to competition effects (Vealey et al., 1998; Kingston, Lane and Thomas, 2010).

Findings during this study show demonstration of ability to be the most significantly related source with re-injury anxiety. This finding is consistent with previous research, whereby demonstration of ability has been identified as an important source in terms of self-confidence. Magyar and Duda, (2000) reported demonstration of ability to have facilitative effects upon sport confidence; and as a significantly related source with confidence restoration. Demonstration of ability is concerned with athletes exhibiting skills or demonstrating superiority to others such as the opposition (Vealey et al., 1998). Vealey et al. (1998) suggests that this source is based on uncontrollable factors, mainly focused on by outcome orientated athletes. However, findings from previous research regarding

demonstration of ability have also been negative, suggesting this source to have debilitating effects upon the development of sports confidence (Vealey et al., 2004). Research also suggests that the use of demonstration of ability is influenced by various factors, such as time to competition effects (Kingston et al. 2010). This is a possible suggestion as to why it is not found to be significantly related to re-injury anxiety during rehabilitation; however becomes a significant predictor of re-injury anxiety during the re-entry phase. In addition the findings show that as the significance of demonstration of ability increases, there is a decrease in re-injury anxiety, thus representing a negative relationship. This finding suggests the importance of demonstration of ability, in terms of reducing levels of re-injury anxiety during re-entry into sport.

Consistent with previous research mastery is identified as the second most significant source related with re-injury anxiety, during re-entry into competition. Classed as a controllable source, research suggests that mastery can facilitate stable sport confidence beliefs. It is found to be a specifically salient source to athletes (Vealey et al., 1998), whereby individuals learn to master or improve personal skills. During Vealey et al. (1998) study, mastery was ranked among the top five sources identified by athletes in terms of sports confidence. According to Vealey and Chase (2008), mastery experiences generally appear as the strongest sources of confidence for athletes in various sporting contexts. Research suggests that athletes who perceive a mastery sport climate are more likely to experience satisfaction from mastery experiences (Magyar and Feltz, 2003), increasing their input of effort and thus positively impacting upon success. Although mastery was found to be the second most significant source related with re-injury anxiety, it must be noted that as the significance of mastery increased, levels of re-injury anxiety increased. This demonstrates a positive relationship; therefore in terms of re-injury anxiety mastery may not be the most appropriate source to rely upon.

Research suggests that athletes are more likely to experience re-injury concerns during the more advanced phases of injury, such as returning to sport (Podlog and Eklund, 2006). Therefore, it is unsurprising that during rehabilitation none of the sources were identified as significantly related to re-injury anxiety. However results do reveal both mastery and demonstration of ability to be the most contributed sources to the prediction of re-injury anxiety during rehabilitation, in comparison with the other insignificant sources. This suggests that both demonstration of ability and mastery have the most significance with regards to re-injury anxiety, during various phases of injury. The significance of these sources are consistent with previous findings, whereby both mastery and demonstration of ability are identified as important (Evans, Hardy and Fleming, 2000).

The remaining sources were found to be insignificantly related with re-injury anxiety during both rehabilitation and re-entry. These include mental and physical preparation, physical self-presentation, social support, vicarious experience, environmental comfort, situational favourableness and coach's leadership. However, the results do show the order of their level of significance, from the least significantly related to the most.

During rehabilitation it is surprising to find that social support contributed the least to the prediction of re-injury anxiety, contrasting findings from a number of previous studies. Research suggests that social support is a very important source during injury recovery and when returning to sport (Johnston and Carroll, 1998). It is found to be a salient source with regards to adherence during rehabilitation and with an athletes' self-perception of success (Johnston and Carroll, 1998). Research also suggests this source as beneficial in assisting athletes throughout the injury rehabilitation period in particular (Johnston and Carroll, 1998).

Vicarious experience accounted for the least amount of variance in re-injury anxiety, during re-entry into sport. This finding supports Hay's et al. (2007) study which found that world class athletes placed little importance on this source. However some research contrasts these findings whereby vicarious experience has been identified as a significant source related to self-confidence (Hardy et al., 2001). These findings that vicarious experience contributes the least to the prediction of re-injury anxiety during return to sport, suggest that athletes during this study would prefer to demonstrate their ability rather than watching others perform successfully, hence the greater significance placed on performance related sources.

An insignificant relationship was found between re-injury anxiety and mental/physical preparation. This finding is inconsistent with previous research, whereby mental/physical preparation is identified as an important source. For example, Hays et al. (2007) found that world class athletes place a great importance upon preparation. The findings show that mental/physical preparation contributes more to the prediction of re-injury anxiety during rehabilitation. Again this finding is inconsistent with the research, suggesting that the pressures of physically demanding skills require extensive physical and mental preparation to build self-confidence (Vealey et al., 1998). Previous research conducted by Vealey et al. (1998) also found mental/physical preparation to be a significantly identified source throughout their study. Therefore, the finding during this study of mental/physical preparation being insignificantly related with re-injury anxiety is surprising. However, as a positive relationship is noted in the results between this source and re-injury



anxiety, the fact that athletes have identified it as an insignificant source may be positive in terms of reducing re-injury anxiety.

Coach's leadership and environmental comfort sources were insignificantly related to re-injury anxiety; however both showed an increased contribution to the prediction of re-injury anxiety during re-entry, suggesting that during situations with increased pressure these sources are more significant to the prediction of re-injury anxiety. Research suggests that a coach's behaviour/feedback can affect athletes' perceptions of competence, impacting upon self-confidence (Horn, 1985). Leadership is concerned with a coach's knowledge and ability to make critical decisions (Vealey et al., 1998). The insignificant relationship identified between coach's leadership and re-injury anxiety does not support previous research, whereby athletes identified coach's leadership as an important category (Vealey et al., 1998). However, the findings do suggest that athletes have a greater belief in their coach's skills and decision making during the return to sport. Environmental comfort is concerned with how comfortable an athlete feels within their surroundings (Vealey et al., 1998). Findings show an insignificant relationship between this source and re-injury anxiety, suggesting that athletes with increased levels of re-injury anxiety place little importance upon environmental comfort, particularly during rehabilitation.

Physical self-presentation is found to be insignificant during both rehabilitation and re-entry into sport. This finding is consistent with previous research whereby physical self-presentation was identified as the least important source during (Magyar and Duda's 2002) study. Research suggests that physical self-presentation may be a more salient source during sports where body types are more likely to be scrutinized such as individual sports, rather than team sports (Vealey et al., 1998). This may be the reason for a lack of significance found between this source and re-injury anxiety in the present study, due to the majority of athletes being involved in team sports.

### **5.3 Strengths and Limitations**

A few strengths and limitations were apparent in the present study. With regards to limitations, the sample size of participants was a disadvantage. Although results demonstrated a pattern concerning the significance of each source, only two sources from the findings appeared as significant with regards to re-injury anxiety. A larger sample size of athletes may have provided different results such as significance placed on sources during the rehabilitation phase, rather than just re-entry into sport.

Another limitation present in this study was the type of questionnaires used to gather data. Both questionnaires involved the use of Likert scales. Due to the subjective nature of this type of scale individuals are likely to interpret each part of the scale differently, making results less accurate. Therefore this is likely to impact upon the overall results by generalising the overall findings of the study.

A strength of the present study is that it addresses an area of sports psychology which is previously limited in the research. The majority of previous research has focused upon self-confidence and self-efficacy during injury (Bandura, 1990,1997; Vealey et al. 1998; Hay's et al. 2007) rather than other relevant psychological factors, such as re-injury anxiety. In addition, the present study investigates the significance of the relationship between sources of sport-confidence and re-injury anxiety, unlike previous research which has only focused on the importance of the sources. Therefore, the present study is likely to increase the depth of knowledge into this limited researched area of re-injury anxiety during injury.

#### **5.4 Practical Implications**

Findings from the present study have key implications to sports psychology practitioners, suggesting the varied effects of specific sources upon re-injury anxiety when returning to sport. A significant relationship was recognised between demonstration of ability and re-injury anxiety. Previous research suggests that this uncontrollable source may have debilitating effects upon the development of sports confidence (Vealey et al., 2004). However findings from the present study highlight the importance of this source in terms of re-injury anxiety, demonstrating a negative relationship between the increased significance of this source and re-injury anxiety. Therefore as the significance of demonstration of ability increases, re-injury anxiety is likely to reduce. This finding will help to educate practitioners in the future, providing them with an increased knowledge into re-injury anxiety and the influence of different sources.

Mastery was identified as a significant source predicting re-injury anxiety during this study, consistent with findings from previous research. This consistency suggests the importance of this source for athletes trying to gain confidence. Consistent findings also highlight the importance of this source to practitioners; therefore they can ensure athletes focus on this source when returning to sport. However, as a positive relationship was identified between the significance of mastery

and re-injury anxiety, athletes may want to limit the use of this source in the future when looking to reduce levels of re-injury anxiety.

Previous studies suggest controllable sources as more important in nurturing confidence than uncontrollable sources (Vealey et al. 1998). This finding may encourage practitioners to specifically focus upon these sources when working with injured athletes. However due to the positive relationship identified between mastery significance and re-injury anxiety in the present study, practitioners and coach's working with athletes may want to place a greater emphasis on demonstration of ability as a source when reducing re-injury anxiety.

## **5.5 Recommendations for Future Research**

A number of recommendations for future studies can be highlighted from this study. As findings show no significance placed upon any of the sources during rehabilitation, when considering re-injury anxiety in the future it may be more relevant to apply a specific focus upon the re-turn to competition phase, whereby a significant relationship between specific sources of confidence and re-injury anxiety is more likely to be presented.

The present study consisted of a number of generalised factors, such as male and female athletes, elite/non-elite athletes and athletes involved in various sports. Therefore the findings from the study are quite generalised. In order to expand upon knowledge in the future it may be more beneficial for research conducted to focus upon specific variables. This is likely to identify more specific findings, breaking down the effects of re-injury anxiety determined by different factors, therefore possibly identifying more sources as significant and other ways to manage re-injury anxiety during injury.

Although this study provided reliable findings concerning re-injury anxiety, another future recommendation to enhance upon these findings could be to conduct the study from a qualitative perspective. Conducting this type of study from a qualitative approach is likely gather more in depth findings, such as the reasoning behind the selection of specific sources in addition to just the identification of sources.

## **5.6 Conclusion**

Overall the present study investigated the relationship between sources of sport-confidence and re-injury anxiety. Only two of the sources, demonstration of ability and mastery were identified to have a significant relationship with re-injury anxiety. As these findings are found to be consistent with previous research, the importance of both mastery and demonstration of ability is evident. It is apparent from the findings that an increased significance of mastery has a positive relationship with increased levels of re-injury anxiety, suggesting that the use of this source in terms of reducing levels of re-injury anxiety may not be that effective. However, findings do reveal a negative relationship between levels of significance upon demonstration of ability and re-injury anxiety. As the significance of demonstration of ability increases, re-injury anxiety is found to decrease. These findings provide increased knowledge for practitioners and coach's working with injured athletes in this field, suggesting the importance of using demonstration of ability as a source in order to reduce re-injury anxiety levels. As the present study is quite generalised in terms of the type of athletes involved, future research could aim to focus upon more specific athletes, such as elite or non-elite performers, athletes from certain sports and specific genders. This will establish any differences into the effects of re-injury anxiety during certain situations. To conclude, the findings from the present study identified the significance of the relationship between specific sources of confidence and re-injury anxiety upon re-entry into sport. However in order to produce more specific findings related with re-injury anxiety, further exploration into this area is warranted.

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# APPENDICES

# **APPENDIX A**

## **ETHICS STATUS**



Cardiff  
Metropolitan  
University

Prifysgol  
Metropolitan  
Caerdydd

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

To: Rebekah Hadley

Project reference number: 13/05/147U

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

Lynne Evans

Supervisor

Cardiff School of Sport  
Cyncoed Campus, Cyncoed  
Road, Cardiff, CF23 6XD UK  
Ysgol Chwaraeon Caerdydd  
Campws Cyncoed, Heol Cyncoed,  
Caerdydd, CF23 6XD DU

Telephone Ffôn  
+44 (0)29 2041 6591  
Fax Ffacs  
+44 (0)29 2041 6768  
Email Ebost  
css@cardiffmet.ac.uk  
[www.cardiffmet.ac.uk](http://www.cardiffmet.ac.uk)

**APPENDIX B**

**PARTICIPANT INFORMATION SHEET**

## **Participant Information Sheet**

**Title of Project:** Sources of sport confidence and re-injury anxiety in injured athletes returning to sport.

### **Background and aims of the research**

The aim of the study is to improve knowledge into the area of sports psychology, concerning the effects of sources of confidence upon re-injury anxiety in sport. The study is undergoing at the Cardiff School of Sport at Cardiff Metropolitan University. The study will be presented as a journal article and results may be used in future research.

### **Why you have been selected as a suitable candidate?**

You have been selected to partake in this study as you meet the requirements needed.

### **What will happen throughout the project?**

You will be required to fill in two questionnaires concerning sources of sports-confidence and re-injury anxiety.

### **Are there any benefits of participation?**

The information obtained from the study will expand upon the knowledge of the relationship between significant sources of confidence and re-injury anxiety. Information gained will allow us to provide you with feedback, benefiting you as a performer with regards to psychological issues experienced during injury.

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

We do not think there are any potential risks involved in the study.

### **Your rights**

Any issues during the study will be resolved by the researcher in charge. You have the right to withdraw immediately from the study at any time, without reason.

### **What happens to the results of the evaluation?**

Your results will be kept private and confidential throughout the investigation. Results may later be used under the conditions stated, such as in future research and as part of an article.

### **What now?**

You will receive up to date details on the project and will receive a consent form that will have to be filled in before participation in the study can begin.

### **Further information**

If you have any questions about the study please don't hesitate to contact us by email.

Miss Rebekah Hadley

Email : St20005152@outlook.cardiffmet.ac.uk

**APPENDIX C**

**INFORMED CONSENT FORM**

**Cardiff Metropolitan University**

**INFORMED CONSENT FORM**

**Title of Project:** Sources of confidence and re-injury anxiety in injured athletes returning to sport

**Name of Researcher:** Rebekah Hadley

**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 SHEET**

### 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 |   |
|----|--|------------|---|---|-----------|---|---|--------|---|
|    |  | 0          | 1 | 2 | 3         | 4 | 5 | 6      | 7 |
| 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<br>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 |   |
|----|---|------------|---|---|-----------|---|---|--------|---|
| 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<br>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 QUESTIONNAIRE**



## 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 | Mod erate ly so | Very much so | Never time            |   | All the |   |   |   |   |
|    |  |                  |             |                 |              | 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       | So much at | Moderately so | Very much so | Never                 |   | All the time |   |   |   |   |
| 1 | I am/was worried about becoming re-injured during re-entry into competition                                | 0                | 1          | 2             | 3            | 1                     | 2 | 3            | 4 | 5 | 6 | 7 |
| 1 | I feel/felt nervous about becoming re-injured during re-entry into competition                             | 0                | 1          | 2             | 3            | 1                     | 2 | 3            | 4 | 5 | 6 | 7 |
| 1 | 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 |
| 1 | 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 |
| 1 | I am/was worried that I may not do as well as I could on returning to competition due to re-injury worries | 0                | 1          | 2             | 3            | 1                     | 2 | 3            | 4 | 5 | 6 | 7 |
| 1 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |
| 2 | 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 |



