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An investigation between an athlete's sources of confidence and re-injury anxiety within the injury process

(Dissertation submitted under the discipline of Sport Psychology)

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An investigation between an athlete’s sources of confidence and re-injury anxiety within the injury process.

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ABSTRACT

The aim of the present study was to investigate the relationship between an athlete's sources of sport-confidence and re-injury anxiety within the injury process. Injured athletes (N=40) completed the Modified Version of the Sources of Sport Confidence Questionnaire (M-SSCQ; Magyar & Duda, 2000) and the Re-Injury Anxiety Inventory (RIAI; Walker, Thatcher & Lavallee, 2010). Multiple regression analysis was used to examine the relationships between the sources of sport-confidence and re-injury anxiety in the rehabilitation and re-entry phases (e.g., frequency and intensity subscales). The results of the multiple regression analysis showed no significant predictor variables to be found between the sources of sport confidence and re-injury anxiety during the rehabilitation and re-entry into sport phases. However, vicarious experience was the only predictor variable to display the highest variance ($p<.04$) that contributed to the prediction of re-injury anxiety during the rehabilitation frequency phase. These findings suggest that the sources of confidence are not significant predictors of re-injury anxiety within injury rehabilitation and re-entry into sport. Further quantitative and qualitative research is required to explain these findings, and may want to consider other psychological factors that may influence re-injury anxiety.

CHAPTER 1

INTRODUCTION

1.0 Introduction

Participation in sport and physical activity has many health benefits for individuals, with the overall aim to increase their physical, psychological and social development (Malisoux et al., 2013). Despite this, any participation in sport that requires physical exertion is not without the inherent danger of physical injury (Tracey, 2003). Indeed, with the increase of sports participation over recent years, the risk of injury has also increased (Kraus and Conroy 1984; Uitenbroek 1996; & Yaffe 1983). For example, each year in the UK almost 29 million sports-related injuries occur within children and adolescents, despite the continual advancements of sport-specific coaching resources, sporting equipment and effective coaching techniques (Emery, Meeuwisse, & McAllister, 2006). Beyond the physical implications that injuries create for many athletes, sports-injuries can also impact an individual's psychological responses (Brewer, 2004 & 2007). Researchers have noted, these psychological responses (e.g., confusion, apathy, frustration and anxiety) experienced by athletes are determined by an individual's self-appraisal of the injury and one's ability to cope with the demands and stressors that may arise within the injury process (Crossman & Jamieson, 1985; Crossman, Jamieson, & Hume, 1990).

The most frequently reported psychological responses experienced by athletes during the injury process are anxiety and re-injury anxiety (Podlog & Eklund, 2006). Re-injury anxiety however, has been noted to be the most salient psychological response to influence an athlete's successfulness to return to sport following injury (Podlog & Eklund, 2007). Researchers have also identified confidence as an extremely important psychological factor that is vital to athlete's self-confidence and re-injury anxiety (Heil, 1993; Weise-Bjornstal et al., 1998). Despite the increased recognition of the psychological issues associated with injured athlete's injury process and return to sport, research in this area surrounding athlete's re-injury anxiety responses to injury is limited. Thus being said, although researchers have acknowledged that an athlete's self-confidence can influence their emotional and behavioural responses throughout the injury process (Andersen, 2001; & Heil, 1993), some cases have found self-confidence can help injured athletes overcome re-injury anxiety (Vealey, 1998). Most recently, research suggests confidence restoration within injured athletes is essential as it helps aid the reduction of anxiety and re-injury anxiety throughout the injury process (Hays et al., 2007), and can facilitate a more desired successful recovery and return to competitive sport.

Whilst research suggests a clear relationship between an athlete's self-confidence and re-injury anxiety to be experienced throughout the injury process and return to sport, research in this area is somewhat limited. Therefore, the purpose of this present study was to investigate the relationship between athlete's sources of confidence and re-injury anxiety within the injury process (e.g., rehabilitation and r-entry into sport). Forty athletes (N=40) completed the Modified Version of the Sources of Sport Confidence Questionnaire (M-SSCQ; Magyar & Duda, 2000) and the Re-Injury Anxiety Inventory (RIAI; Walker, Thatcher & Lavallee, 2010). Results were then analysed to further explore the possible relationships between the sources of sport-confidence and re-injury anxiety (e.g., frequency and intensity levels) within the injury process.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter will review the current sport psychology literature that is associated with athletic injury and the psychological responses and issues that are involved within the injury process. To follow, a critique of the confidence and re-injury anxiety literature will be discussed, which will highlight the importance of injured athlete's confidence restoration in relation to re-injury anxiety. Finally, this chapter will provide a rationale for the purpose of the present study.

2.1 Injury in sport

Returning to sport following injury has been suggested to be a stressful process for athletes to experience (Bianco, 2001; Wadey & Evans, 2011). Therefore, researchers have concentrated upon this area in the sports psychology field, and have paid great attention to an athlete's psychological aspects during the injury process and return to sport (Williams, 2001). With psychological factors becoming increasingly recognised as having a substantial role in the prevention of sports injuries, it is important to understand the influence and occurrence of the injury as well as accounting for its timing (Hamilton et al., 2011). Most recently, with the rise of sports participation over recent years, sports incidences have also increased due to the physical demands of sporting activity and its robust nature (Brewer, 1994; Duda et al., 1989). It has therefore been suggested that athletes who are physically but not necessarily psychologically ready but not necessarily psychologically ready to return to sport may be on the rise (Wadey & Evans, 2011). As a result, researchers have noted, throughout the injury process athletes experience an array of psychological emotions (e.g., apathy, confusion, anxiety and fear) which have been found to influence athlete's successfulness to injury rehabilitation and the return to sport (Johnston & Carroll, 1998; Macchi & Crossman, 1996; Tracey, 2003). Indeed, whilst research suggests athletes returning to sport following injury are characterised by fears of re-injury (Rotella, 1985), worries about returning to pre-performance levels (Crossman, 1997) and emotional difficulties such as isolation from teammates and coaches, have been highlighted as additional maladaptive aspects affecting an athlete's athletic identity (Mankad & Gordon, 2010). Despite the extensive research within the sports psychology domain which has suggested an athlete's psychological responses affect the athlete's successfulness to the return to sport; little attention has focused upon the relationship between athletes' sources of confidence and re-injury anxiety within the injury process.

2.2 conceptual models

A number of conceptual models have been presented to the sport psychology literature to further our understanding of athlete's responses to injury. The most consistently reported model is that of Wiese-Bjornstal et al. (1998) (see figure 1.0). Wiese-Bjornstal's at al. (1998) integrated model of responses includes situational moderating and personal factors, as well as cognitive, emotional and behavioural responses of injured sports athletes that can change over time, where both psychological and physical recovery is the process outcomes. The key idea of this model is that individual responses may differ from others, depending on how the injury is perceived and the athlete's ability to cope with the physical and psychological stressors and demands. For example, cognitive appraisals are suggested to effect athlete's behavioural responses to injury. Wiese-Bjornstal et al. (1998) also suggests personal (e.g., demographic variables and optimism) and situational variables (e.g., rehabilitation environment and social support) factors can work independently or in conjunction, which can influence athletes responses to injury (e.g., cognitive, emotional and behavioural) (Carson & Polman, 2008; Gallagher & Gardner, 2007; Podlog & Eklund, 2006; Udry, 1997).

Self-confidence is one psychological variable believed to differ over a period of time. According to Quinn and Fallon (2006) athletes experience a decrease of self-confidence at the onset of injury, which increases towards the end of the injury process when the athlete is fully recovered. Therefore, it is not surprising that confidence restoration has been identified as an important factor for athletes during injury rehabilitation and the return to sport phase (Magyar & Duda, 2000), as well as the sources that influence athlete's confidence levels (e.g., frustration, anxiety and re-injury anxiety (Evans et al., 2000; Podlog & Eklund, 2006; Rotella, 1985;) which may lead to poor adherence to injury rehabilitation and an unsuccessful return to sport (Johnston & Carroll, 1998).

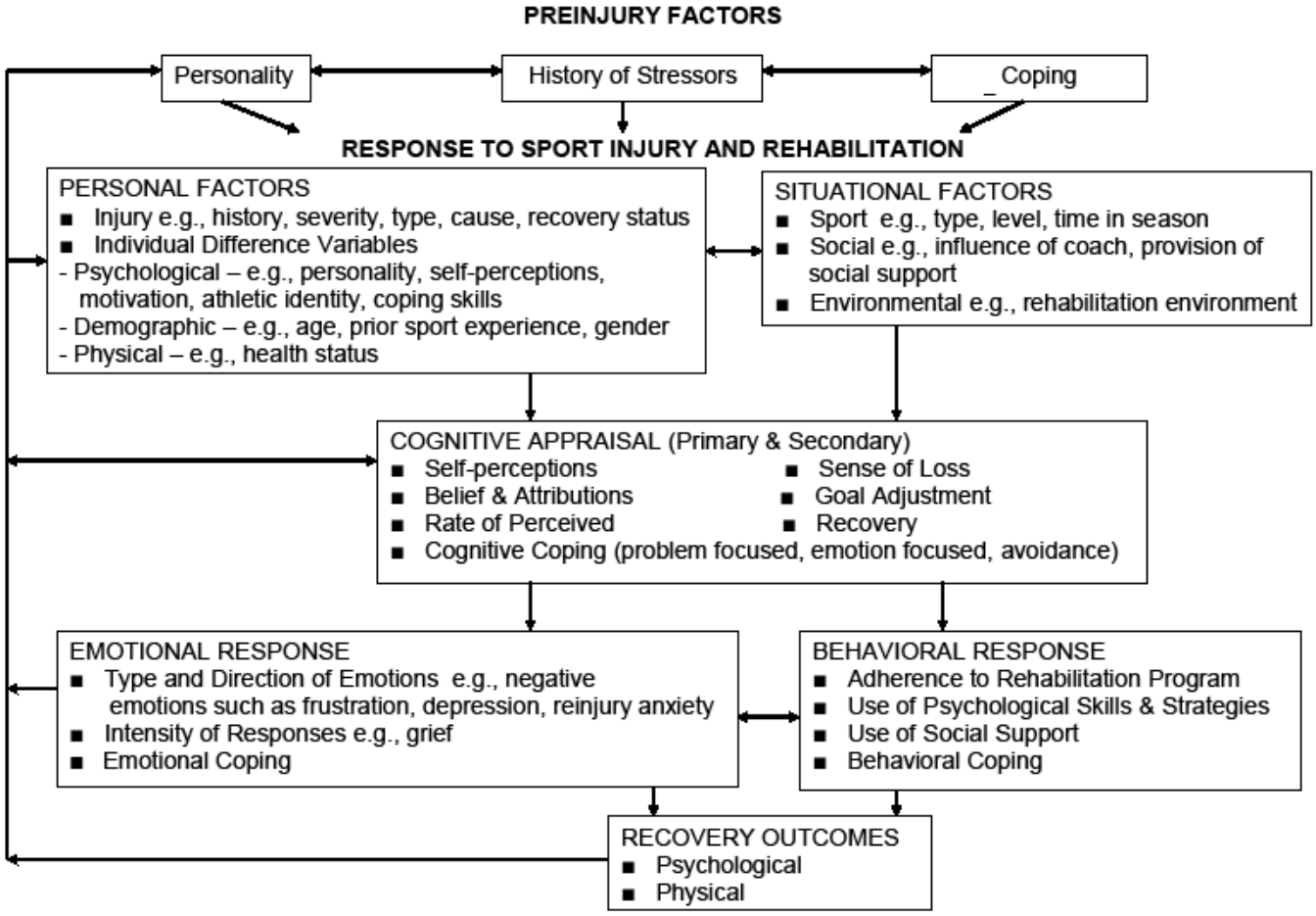

Figure 1.0: Wiese-Bjornstal et al's. (1998) integrated stress-process model of psychological response to the injury and rehabilitation process.

2.3 Psychological Responses

Typically, athletes experience an array of psychological responses, which can vary throughout the course of the recovery process, (e.g., injury onset, rehabilitation and return to competitive sport) (Wilkerson, Giles & Siebel, 2012). These responses such as cognitions and emotions can fluctuate over time (e.g., feelings of loss, confusion, stress and anxiety) and can be altered by an athlete's self-perceptions within the injury process.

At the onset of injury, during this phase athletes experience a myriad of cognitive, emotional and behavioural responses, that are often more intense than those encountered in the following phases (Carson & Polman, 2008; Petitpas & Danish, 1995). Commonly, the most frequent features injured athletes experience during this phase consist of; emotional confusion, a lack of understanding of the injury and the recovery process, the dilemma of whether or not to compete whilst injured, and the loss of functional ability (Gallagher & Gardner, 2007).

For many injured athletes the rehabilitation phase can be a period of exposed uncertainty and frustration, as athletes adjust to this recovery phase (Wadey & Evans, 2010). It is not uncommon for athletes to isolate themselves, in particular from those associated with their sport (e.g., coaches and teammates) as it can be a challenging unfamiliar process for athletes to experience (Mankad et al., 2009; Tracey, 2003). During this phase, the majority of injured athletes will experience a number of physical and psychological challenges as they try to advance their recovery and successful return to sport (Bianco et al., 1999; Evans et al., 2000). These challenges include those associated with physical incapacitation, isolation, financial issues, slowness of progress and setbacks and the boredom of the rehabilitation activities (Bianco et al., 1999).

The demands and responses athletes experience during the return to sport phase are often varied and complex in nature (Andersen, 2001; Bianco, 2001; Brewer 2007; Carson & Polman, 2008; Evans et al., 2000; Podlog, Dimmock, & Miller, 2011; Podlog & Dionigi, 2010; Podlog & Eklund, 2005, 2006, 2007; Podlog, Lochbaum, & Stevens, 2010). Literature suggests, these responses can be categorised into three recurrent themes such as; re-injury anxiety, the decision to return to sport and returning to pre-injury performance levels (Wadey & Evans, 2011).

Re-injury anxiety is the most salient emotion experienced during the return to sport (e.g., Evans et al., 2000; Johnston & Carroll, 1998a; Kivst et al., 2005; Podlog & Eklund, 2007; &

Walker et al., 2004. A lack of confidence in the injured body part, pain and soreness at the site of injury, performing the same skill in the same situation where the injury occurred, concerns for potential setbacks and the physical demands of training and competition are the cognitions and emotions that are the most dominant factors associated with athletes re-injury anxiety responses (e.g., Bianco et al., 1999; Cox, 2002; Podlog & Eklund, 2006).

Traditionally, the return to sport is usually decided upon based on the athlete's physical and psychological readiness. However, researchers have recently acknowledged that these responses are not always synonymous in nature (Bauman, 2005; Evans et al., 2000; Johnston & Carroll, 1998a; Kvist et al., 2005; Podlog & Eklund, 2006, 2007). Various factors have been reported to affect an athlete's psychological readiness to return to sport such as; self-presentation concerns, feelings of disengagement and isolation from others, negative social comparison, re-injury anxiety, competitive anxiety and a lack of confidence in the injured body part, are believed to decrease athlete's emotional self-esteem (Podlog & Eklund, 2006, 2007; Udry et al., 1997).

Pre-injury levels of performance have also been reported to challenge an athletes' injury process, which is an important determinant that can heavily impact a successful return to sport (Podlog & Eklund, 2009). Often when athletes initially return to sport, they have unrealistic expectations of their performance capabilities (Bianco et al., 1999; Podlog & Eklund, 2007, 2009), which can negatively impact the confidence levels of the athlete, and in-turn may lead to decrements to performance and potentially increase the risk of re-injury anxiety (Podlog & Eklund, 2007).

2.4 Self- Efficacy and Self-Confidence

Self-confidence is one of the most important psychological characteristic to influence an athlete's sports performance (Vealey et al., 1998). Often, self-confidence and self-efficacy are used interchangeably (Vealey, 1986; Short & Ross-Stewart, 2009) which have been reported to significantly influence athletic performances (Vealey, 2001). Self-confidence has been defined as an individual's ability to be successful in sport (Vealey et al., 1986), whereas self-efficacy involves an athlete's belief in their ability to perform by organising and carrying out attainments Feltz et al. (2008).

It is believed an athlete's cognitive responses to injury are most likely to experience decrements of self-confidence and self-efficacy (Bandura, 1990). Researchers (e.g.,

Bandura, 1997; Hays et al., 2007; Magyar & Duda 2000) suggest these response decrements can inhibit an athlete's successful return to sport. Indeed, it is not surprising that confidence restoration following an athletic injury research has been further examined to identify the most salient sources of confidence during confidence restoration (Magyar & Duda, 2000). Magyar and Duda's (2000) study identified several sources of confidence to be important factors within the rehabilitation phase (e.g., leadership, qualities of the athletic trainer and the degree of comfort within the training environment). Mastery, demonstration of ability, mental and physical preparation, verbal persuasion and vicarious experience were also sources of confidence that were identified as important sources of confidence for athlete's confidence restoration.

Similar findings were also identified within Evans, Hardy and Fleming's (2000) study, which involved three rugby players returning to sport following a full recovery from injury. For example, it was reported the use of imagery by athletes was a form of both mental preparation and demonstration of ability, as well as gaining confidence in specific situations where the injury had occurred as a part of vicarious experience. Further research suggests the sources of confidence can vary amongst individuals which can be determined by numerous factors (e.g., gender differences, number of participants, age of the participants, the level of sport played, and the athlete's individual variables) (Feltz et al., 2008). According to Bandura, (1997) how an athlete perceives their efficacy beliefs and how they repeat certain scenarios can influence their performance in a positive or negative manner.

Research that supports Banduras (1997) self-efficacy theory has focused upon where athletes derive their efficacy from. The most salient sources of self-efficacy to be reported is that of performance accomplishments as they are based on an individual's mastery experiences (Bandura, 1997). Mastery experiences were also reported to be the most salient sources of confidence within a variety of sports (Vealey & Chase, 2008). In Vealey and Chase's (2008) study, it was reported that individuals who had higher levels of successful mastery experiences were more likely to have greater levels of self-efficacy beliefs. Whereas negative mastery experiences were more likely to be associated with lower levels of efficacy beliefs (Vealey & Chase, 2008). Although Bandura's (1997) self-efficacy theory has proved to be effective in underpinning self-confidence, the theory has been questioned as being too broad and not sport-specific to athletes. Vealey (1986) therefore conceptualised an integrative model of sports confidence, which focused on

sport-confidence and provides two constructs (e.g., SC-trait and SC-state) along with a dispositional construct ‘competitive orientation’.

The integrative model predicts that SC-trait a dispositional confidence interacts with the athlete’s competitive orientation, which influences the SC-state (Vealey, 1986, 1998). However, despite Vealey’s (1986) model of sport-confidence it is not without limitations. These include; limited support for the relationship between SC-state and competitive orientation (Martin & Gill, 1991) and SC-trait was reported as better predictor of SC-state in regards to an athlete’s sports behaviour and performance (Roberts & Vealey, 1992).

2.5 Sources of Sport-Confidence

Due to the limitations within Vealey’s (1986) model, Vealey et al., (1998) provided a more advanced framework. This reconceptualised model specifically focused upon sport-confidence which disregarded the SC-trait and SC-state components, and identified the following; mastery, demonstration of ability, physical and mental preparation, social support, leadership, vicarious experience and situational favourableness as important sources of sport-confidence. Consistent with these sources of confidence Hays et al. (2007) also reported Vealey’s et al’ (1998) nine sources of sport-confidence to be the most salient sources of confidence for sports athletes.

Vealey et al’s. (1998) conceptual model, Vealey et al. (1998) further investigated where athletes derive their sport confidence from. Research found that mastery, demonstration of ability and physical and mental preparation were the most important sources of confidence. Vealey et al. (1998) further proposed that sources of sport-confidence based on controllable factors (e.g., mastery and mental and physical preparation) facilitate higher levels of positive outcomes compared to sources of confidence based on uncontrollable factors (e.g., situational favourableness and physical self-presentation). However, gender differences were noted in this model, as female athletes identified social support as more important source of confidence compared to male athletes. These findings relay the importance of social evaluation and how social support viewed differently by genders can influence ones confidence (Vealey et al., 1998).

Hays et al., (2009) also found that females may be more susceptible to external confidence debilitative factors such as, motivation climate, which is associated with the

culture of the sports performance compared to male athletes. Previous research has also suggested gender differences are apparent in relation to identify the most important sources of confidence (Hays et al., 2007). Vealey et al. (1998) reported similar findings, identifying physical self-presentation, physical and mental preparation, performance accomplishments and social support to be important sources of confidence.

Vealey et al., (1998) later developed the sources of sport questionnaire (SSCQ) to measure the athlete's nine sources of self-confidence. The questionnaire takes into account athletes' most salient sources of confidence whereby athletes gain most of their confidence from (Feltz et al., 2008). Within this study the sources of sport-confidence were identified and ranked in order of most to least import (e.g., mastery, social support, mental and physical preparation demonstration of ability and physical self-presentation).

It is important to note that although the sources of confidence have been acknowledged as important factors associated with an athlete's confidence, research involving other psychological factors and confidence within the injury process is limited. For example re-injury anxiety identified by researchers (e.g., Podlog & Eklund, 2006) has aimed to identify the effects of increased levels of re-injury anxiety during injury. However, there is little research that has investigated re-injury anxiety and how the psychological response can be managed by athletes.

2.6 Self-Confidence and Re-Injury Anxiety

Re-injury anxiety is a common psychological factor athletes experience during the return to sport following injury (Taylor & Taylor 1997). It has been speculated that the fear of re-injury is always present for all athletes whether they have experienced injury or not (Heil, 1993). Fear of re-injury has been suggested to influence athlete's psychological responses, such as reduced confidence and focus, hindering the timely recovery of the return to sport. Heil's (1993) study explored athletes confidence in relation to injury and found that athlete's re-injury anxiety responses reduce their confidence levels which leads to a delayed return to sport. However, there were limitations that were found in his study. For example, the study did not outline and justify the relationship between the sources of confidence and re-injury anxiety responses. Similar research conducted by Taylor and Taylor (1997), is comparable to the results of Heil's (1993) study, whereby the fear of re-injury anxiety was clearly associated with a lack of trust in the injured site of the body. This

lack of trust experienced by athletes is believed to represent a substantial hindrance for athletes returning to sport, as it can act as salient hesitation among athletes, which can ultimately influence the athletes re-injury anxiety, following Heil's (1993) proposed mechanisms; physiological changes, psychological changes and automatic changes. These suggested mechanisms could further result in an unpredictable performance in the rehabilitation setting and delay the athletes return to competitive sport.

It has also been found that during the injury process athletes are believed to think about their injuries re-occurring (Walker, 2009). Walker's (2009) study found athletes experienced emotions (e.g., feeling tense, and sweaty) during the rehabilitation exercises, on the return to competitive training and competition. Whilst these emotions have appeared to show greater anxiety responses than emotional fear (Bianco, 2001; Johnston & Carroll, 1998a, & Podlog & Elkund 2005), re-injury anxiety is the most influential psychological response during this phase.

Overall, the current sports psychology literature suggests re-injury anxiety, a psychological response to have a debilitative association with an athlete's confidence levels within the injury process, in particular the return to sport following injury. Although research in this area has developed over recent years, which has suggested confidence restoration is essential for athletes over the course of the injury process, there is a lack of theoretical research to underpin whether the of the sources of sport-confidence predict re-injury anxiety within the injury process. Therefore the present study will investigate the relationship between an athlete's sources of confidence and re-injury anxiety within the injury process (e.g., rehabilitation and re-entry into sport), as this will allow practitioners and coaches to facilitate a more effective recovery plan for athletes.

CHAPTER 3

METHODOLOGY

3.1 Research Design

The purpose of the current study is to investigate the relationship between injured athletes' sources of confidence and re-injury anxiety during the injury process/rehabilitation. With this in mind, a quantitative research design was selected and deemed most applicable, as this approach enables independent (e.g., sources of confidence) and dependent (e.g., anxiety) variables to be directly measured in a statistical manner, which can be generalised to a broader population (Gratton & Jones, 2010). The use of questionnaires was the preferred measure used to collect data within this study, which is consistent with the quantitative approaches in the sports injury context by Magyar and Duda (2000) and Podlog and Eklund (2005).

3.2 Participants

Participants (N = 40) comprised of male (N = 21) and female (N = 19) sports performers aged between 18 and 37 (mean = 22.02, SD = 3.26). Participants disclosed a variety of sports injuries which ranged in severity from high to low (e.g., severe ACL rupture, ACL tear, torn labarum and partial dislocation, broken tibia, pulled ligaments, muscular strains and shin splits. Participants had participated in a variety of sports that ranged from international, national, regional and club, which included; rugby, football, netball, basketball, rounder's, athletics, dance, snooker swimming, taekwondo, triathlon, equestrian and golf. All participants had sustained a sports injury that had prevented regular participation in their main sport for more than two weeks (mean = 798 weeks SD = 17.15) 0-6 months (range N = 26) 6-12 months (range N = 8) 12-18 months (N = 4) 18-24 months (range N = 2).

3.3 Measures

3.3.1 Sources of Confidence - Modified Sources of Sport-Confidence Questionnaire (M-SSCQ; Magyar & Duda, 2000).

The sources of sport confidence questionnaire (SSCQ) originally developed by Vealey and colleagues (1998) were used to measure the sources of sport-confidence experienced by athletes'. In this present study, the SSCQ measure modified (M-SSCQ) by Magyar and

Duda (2000), which was specifically adapted for injured athletes was used to examine the sources of confidence experienced by athletes' in a rehabilitation setting.

The M-SSCQ consists of 43 items with a total of nine subscales: mastery (i.e., "improve my performance on a rehabilitation skill"), demonstration of ability (i.e.., "I know I am better than others in rehabilitation"), physical/mental preparation (i.e., "I feel good about my weight"), physical/self-presentation (i.e., "I feel good about my weight"), social support, (i.e., "I get positive feedback from my teammates and/ or friends"), trainers leadership (i.e., "I know my coach is a good leader"), vicarious experience (i.e., "I see successful rehabilitation performances by other athletes"), environmental comfort (i.e., "I like the environment where I am performing") and situational favourableness (i.e., "I see the breaks are going my way"). Participants were required to rate their levels of confidence on a Likert scale that ranged from 0 (*not at all confident*) to 7 (*always confident*) from the statement "I usually gain/gained (as appropriate) confidence during my rehabilitation programme from….."

The M-SSCQ is a valid and reliable tool which enables the researcher to assess the potential sources of confidence that an athlete experiences during the injury process (Magyar & Duda, 2000). Vealey et al.'s (1998) four phase study provided the initial validity and reliability of the SSCQ, which calculated the Cronbach alpha coefficients to measure the internal consistency, which ranged from .71 to .93, exceeding Nunnally's (1978) criterion of .7. However, recent findings have found little support for the reliability of situational favourableness as a source of confidence when applied in an injury setting (Magyar & Duda, 2000; Wilson, Sullivan, Myers & Feltz, 2004). Therefore, with the findings from previous research, Cronbach alpha coefficients were analysed for the M-SSCQ to eliminate inconsistencies within the reliability analysis for this study.

3.3.2 Re-injury Anxiety Inventory – (RIAI) Walker et al. (2010) Re-injury Anxiety Inventory

The RIAI was used to measure participant's re-injury anxiety that they may experience/experienced as injured athletes during the injury process/rehabilitation. The RIAI includes a total of 28 items and comprises two factors: re-injury anxiety rehabilitation (RIAI-R: 13 items) (i.e. "I feel/felt nervous about becoming re-injured during rehabilitation") and re-injury anxiety concerning the athletes' return to sport (RIAI-RE: 15 items) (i.e. "I

feel/ felt confident that I will not become re-injured during re-entry into competition"). Participants were required to record the level of how much they feel/felt they experienced each item on two separate Likert scales of different score levels. The level of each symptom was scored from 0 (*not at all*) to 3 (*very much*), and the frequency level was scored from 1 (*never*) to 7 (*all the time*). Walker et al. (2010) reported acceptable Cronbach's alpha for internal consistency of .98 (RIAI-R) and .96 (RIAI-RE).

3.4 Procedure

Participation in this study was voluntary. Once ethical approval was obtained athletes who met the criteria of the study were asked if they would be willing to participate in the study by the researcher. Participating athletes confirmed their agreement in the study and signed a consent form and were informed of their confidentiality anonymity prior to their involvement in the study (see appendix B). Participants were given the option to choose to complete the assessment packet of questionnaires online via survey monkey or hardcopy. The assessment packet contained the M-SSCQ (Vealey et al., 1998) and RIAI (Walker et al., 2010) questionnaires, which took approximately 20 minutes to complete. Participants were reminded there were no right or wrong answers, and if they were unsure on a question they should contact the researcher. Once the participants completed the set of questionnaires, their data was collected from both sources and then entered into Microsoft excel and then transferred into SPSS windows version 20.0 to further analyse the data.

3.5 Data Analysis

As mentioned earlier in this chapter, to ensure internal reliability of the participant's sources of sport-confidence and re-injury anxiety subscales, Cronbach's alpha tests were pre-screened prior to the analysis, to confirm the internal reliability of the athletes' sources of confidence and re-injury anxiety subscales. Scores that were .7 or above were accepted as reliable (Nunnally, 1978). However, subscales that reported alpha coefficients of below .7 were further analysed to evaluate whether an individual item was detracting the overall reliability of the subscale. In this study items that reduced the overall reliability of the subscale which was below .7 was removed from the data analysis. Once removed, Cronbach's alpha coefficients were re-calculated to ensure the removal of the item had not affected the overall reliability, and to make sure the results were accurate.

Multiple regression analysis was used using the statistical software SPSS 20.0 to determine any significant relationships between the two variables of an athlete's nine sources of sport confidence subscales and the re-injury anxiety subscales of frequency and intensity. This method was selected due to its ability to predict a specific criterion variable when there are multiple predictor variables. For the present study this analysis enabled the researcher to understand whether the M-SSCQ could predict the re-injury anxiety subscales (e.g., frequency and intensity), and look for the sources of confidence that are the best predictors of the different subscales of re-injury anxiety. A value of $p<.05$ was used to determine the significance of the model and each regression coefficient. Prior to running the analysis, the underlying assumptions of linearity, homoscedasticity, normality and multicollinearity were conducted and assessed to confirm accurate and reliable results suggested by Field (2009).

CHAPTER 4

RESULTS

4.1 Introduction

This chapter provides an account of the internal consistency results of the M-SSCQ and RIAI subscales and the results of the multiple regression analysis.

4.2 Reliability Scale

For each subscale in the M-SSCQ and RIAI the internal reliability was calculated using Cronbach's alpha. Original and final reliability scores for the M-SSCQ and RIAI-R and RIAI-RE are shown in Table 4.1. Acceptable Cronbach's alphas based upon Field's (2009) criteria of above .7, ranged from .71 to .89 with the exception of situational favourableness and leadership. To address the low alpha for situational favourableness, the whole subscale was removed as no items within the subscale reached an acceptable reliability score. To overcome a low alpha score for leadership, item three was removed from the subscale. In addition, the revised alpha changed from .46 to .75, which met the criteria of internal reliability above .7. Acceptable reliability also emerged within the RIAI. Scores ranged from .94 to .96 in both rehabilitation and re-entry subscales of frequency and intensity.

Table 4.1 Coefficient alphas for the original and final subscales values of the M-SSCQ.

Source	*Original* α	*Final* α
Mastery	.87	.87
Demonstration of Ability	.84	.84
Physical Self Presentation	.89	.89
Social Support	.77	.77
Vicarious Experience	.89	.89
Environmental Comfort	*.71*	*.71*
Situational Favourableness ****	.46	.46
Leadership*	.68	.75
Intensity Rehabilitation	.94	.94
Intensity Re-entry	.94	.94
Frequency Rehabilitation	.95	.95
Frequency Re-entry	.96	.96

****Subscale removed from further analysis procedures as it did not meet the criteria of Cronbach's alpha

* Item removed to meet the criteria of Cronbach's alpha

4.3 Underlying Assumptions

Before conducting the multiple regression analysis, all underlying assumptions including: Linearity, normality, multicollinearity and homoscedasticity (Field, 2009), were tested to ensure the regression analysis did not underestimate the true relationships between the variables. The assumption for normality was tested using skewness and kurtosis to examine the distribution of the residuals. Table 4.2 displays the distribution of the eight independent variable (sources of sport-confidence) subscale z-scores. Normal distribution was cited in all subscales excluding physical self-perception as the Z-score of skewness was beyond +/-2 (Field, 2009). There were no signs of multicollinearity between the independent variables, as they had acceptable p values (tolerance>.10 and VIF<10.00), which showed no high correlations between the variables (Field, 2009). Lastly, the assumption for homoscedasticity was checked to assess whether the residuals were approximately equal for all the predicted variables. Results of the Q-Q Plot graphs demonstrated constant errors across all levels of the independent variables.

Table 4.2 Normality testing Z-scores of Skewness and Kurtosis

Variable	Z-skewness	Z-Kurtosis
Mastery	*-1.12*	-.08
Demonstration of Ability	0.72	-1.01
Mental and Physical Preparation	-0.77	-0.12
Physical Self Perception	-2.72*	0.02
Social Support	-0.25	-0.73
Environmental Comfort	0.32	-1.07
Re-Entry Intensity	*1.50*	-0.09
Rehabilitation Intensity	1.56	-0.78
Rehabilitation Frequency	1.14	-1.34

*Physical self-perception Z-skewness score showed abnormal distribution.

4.4 Multiple Regressions

Before focusing on the regression results, it is important to understand the descriptive statistics of the means and standard deviation values for the M-SSCQ subscales, which is presented in Table 4.3. Results show that leadership had the highest score of 6.26 (mean) when athletes perceived their confidence as the highest in an injury environment. Whereas, demonstration of ability had the lowest score of 4.74 (mean), which suggests athletes did not rate as an important source of confidence during the injury process/rehabilitation.

Table 4.3 Descriptive statistics for the M-SSCQ.

Model	*Mean*	*Std. Deviation*
Mastery	5.80	1.23
Demonstration of Ability	4.74	1.59
Mental and Physical Preparation	5.73	1.22
Physical Self Presentation	5.80	2.11
Social Support	*6.14*	.98
Vicarious Experience	4.94	1.51
Environmental Comfort	5.27	1.39
Leadership	6.26	.91

Table 4.4 shows that the maximum variance of the dependent variable (re-injury anxiety subscales) was 62.6%, which can be explained by the independent variable (sources of confidence). 62.6% of the variance in re-entry into sport (intensity) can be explained by the M-SSCQ. The adjusted R square however takes into consideration a more reliable score compared to the sample size, thus correcting the re-entry intensity variance to 12.8% when it is explained by the sources of sport-confidence.

Table 4.4 multiple regression model summary

Re-injury Anxiety Subscales	R	R square	Adjusted R Square	Std. Error of the Estimate
Intensity Rehabilitation	*.419a*	.176	-.038	20.17
Frequency Rehabilitation	*.418a*	.175	-.037	13.44
Intensity Re-entry	*.523a*	.274	.087	12.80
Frequency Re-entry	*.460a*	.212	.008	23.35

Table 4.5 shows the results for the ANOVA test for the re-injury anxiety rehabilitation and re-entry subscales (frequency and intensity). The test identified the significance of the R squared values, degrees of freedom and F value shown in Table 4.5. All subscales were insignificant ($p<.05$).

Table 4.5 ANOVA

Re-injury Anxiety Subscales	Sum of Squares	Df	Mean Square	F	Sig.
Intensity Rehabilitation	1184.906	8	148.113	.819	.592b
Frequency Rehabilitation	2687.903	8	335.988	.826	.592b
Intensity Re-entry	1971.394	8	239.674	1.462	.211b
Frequency Re-entry	4537.269	8	567.159	1.040	.428b

Table 4.6 and 4.7 shows the independent variables (sources of sport-confidence) that have the highest contribution to the variance of the dependent variable (re-injury anxiety).

Table 4.6 Coefficient values for Intensity Rehabilitation and Frequency Rehabilitation of Re-Injury Anxiety

	Intensity Rehabilitation		Frequency Rehabilitation	
Sources	B	Sig.	B	Sig.
Mastery	-.22	.39	-.17	.49
Demonstration of Ability	.73	.73	.05	.83
Mental and Physical Preparation	.86	.86	.04	.84
Physical Self Presentation	.17	.17	-.24	.22
Social Support	.36	.36	-.21	.43
Vicarious Experience	*.08*	.08	.58	.04*
Environmental Comfort	.58	.58	-.09	.64
Leadership	.72	-.72	-.07	.73

*p<0.05)

Table 4.6 shows although the overall regression model was not significant, vicarious experience was the closest predictor variable of re-injury anxiety during the rehabilitation phase (frequency) (p<.04).

Table 4.7 Coefficient values for Intensity Re-entry and Frequency Re-entry of re-injury anxiety.

	Intensity Re-entry		Frequency Re-entry	
Sources	B	Sig.	β	Sig.
Mastery	.38	.12	.31	.22
Demonstration of Ability	-.23	.33	-.33	-.20
Mental and Physical Preparation	-.44	.06	-.40	.10
Physical Self Presentation	-.28	.12	-.20	.29
Social Support	.05	.81	.21	.40
Vicarious Experience	.45	.09	.48	.86
Environmental Comfort	-.22	.22	-.08	.65
Leadership	-.06	.74	-.04	.84

Table 4.7 shows no significant variables to predict re-injury re-entry into sport in the frequency and intensity subscales as ($p<.05$).

CHAPTER 5

DISCUSSION

5.1 Introduction

The aim of the current study was to investigate the relationship between an athlete's sources of confidence and re-injury anxiety within the injury process. The results of this study revealed all eight of the sources of sport-confidence (e.g., mastery, vicarious experience, physical and mental preparation, physical self-presentation, social support, environmental comfort and leadership) did not significantly contribute to the prediction of re-injury anxiety during rehabilitation and re-entry into sport. Therefore, a number of these findings warrant further attention which may reveal other psychological aspects to be better predictors of re-injury anxiety.

This chapter will discuss the results from the study, followed by identifying the strengths, limitations and practical implications. Future recommendations for further research will also be addressed, along with a summary to conclude the overall study.

5.2 Sources of confidence and Re-injury Anxiety

The results of the current study showed that during rehabilitation vicarious experience showed the largest contribution to predict re-injury anxiety. Vicarious experience showed as its significance increased, re-injury anxiety decreased, which suggests an inverse relationship. This result is consistent with other research (e.g., Evans et al., 2011; Taylor & Taylor 1997), which has previously identified the importance of vicarious experience has on an athlete's confidence and re-injury anxiety. Consistent with Evans et al. (2011) work an inverse relationship between vicarious experience and re-injury anxiety was also found. Evans et al. (2011) reported when injured athletes successfully return to sport, athletes can become more confident from watching other athletes successfully perform to their pre-injury levels when they return to sport following injury. Therefore, previous research suggests that vicarious experience can significantly contribute to an athlete's re-injury fears, as confidence is enhanced from watching others (e.g., injured teammates) who have successfully and fully recovered from injury (Taylor & Taylor, 1993).

Whilst previous studies (e.g., Hardy & Evans, 1995; Jones et al., 2002) have identified vicarious experience as an important means to increase an athlete's level of confidence, it should be made clear, those athletes who derive their confidence from social comparison based sources are at a greater risk of experiencing fluctuating levels of confidence, due to the instability of the source itself (Magyar & Duda, 2000). Therefore in relation to the

current study, caution is advised when interpreting these findings due to the stability and controllability of the source, as it may impede the levels of confidence which can influence an athlete's re-injury anxiety

In contrast to previous research (e.g., Magyar & Duda), the current study showed mastery to be an insignificant source of confidence relation to the prediction of re-injury anxiety during rehabilitation and re-entry into sport. According to Vealey et al. (1998) mastery is a controllable source that is believed to facilitate an athlete's sport-confidence beliefs as individuals can gain confidence when they master or improve personal skills. Vealey and Chase (2008) have also reported mastery as an important source of confidence. They reported that generally the most dominant sources of confidence that are used by athletes in a variety of sports are mastery sources. Similarly, Magyar and Feltz (2003) suggest athletes who may perceive a sport climate as mastery are most likely to gain greater mastery experiences, which can increase effort during the return to competition, and can therefore positively impact an athlete's success full recovery. The findings of the current study are therefore surprising as mastery was not a significant predictor of re-injury anxiety.

Demonstration of ability is also inconsistent with previous research (e.g., Magyar & Duda, 2000) which has identified this as an important source in relation to an athlete's self-confidence. Magyar and Duda, (2000) reported demonstration of ability to positively influence an athlete's sports-confidence, and to significantly facilitate confidence restoration. Demonstration of ability involves athletes demonstrating superiority or performing skills towards others (e.g., the opposition) (Vealey et al., 1998), which focuses mainly on outcome orientated athletes due to its uncontrollable nature. In contrast to other research (e.g., Vealey et al., 2004, demonstration of ability has been suggested to have negative effects to the development of an athlete's sport confidence. Kingston et al. (2010) also reported demonstration of ability can be influenced by other factors such as an athlete's time to competition. Therefore, this may be a potential reason as to why demonstration of ability was not a significant predictor of re-injury anxiety in the current study, as athletes may not have felt pressured to return to sport within a certain time frame.

Physical and mental preparation was also found to have no significance on re-injury anxiety, and predicted a limited amount of variance in the rehabilitation and re-entry subscales. This finding, is contrasting to other research which has suggested that physical

and mental preparation is an important source of confidence for athletes. Previous research (e.g., Hays et al., 2007) found that world class athletes place a great amount of importance upon their preparation, which suggests mental and physical preparation to be a significant source of confidence to world class performers. However it is important to note although this finding by Hays et al., (2007) identified mental and physical preparation as an important source of confidence to predict re-injury anxiety during rehabilitation, this study only focused upon world class performers. Therefore it can be argued that this finding is not comparable to the current study as it did not look at world class athletes. Similar findings reported by Vealey et al. (1998) also found mental and physical preparation to be a significant source of confidence within their study. These finding are however contrasting to the current study as Vealey et al. (1998) and Hays et al (2007) suggest that mental and physical preparation is essential for athletes to increase their self-confidence, when athletes are presented with physically demanding skills. Although this is surprising in relation to findings of the current study, , a positive relationship was cited between mental and physical preparation and re-injury anxiety, which suggests that athletes may have reported this source of confidence to have a positive influence in relation to the reduction of re-injury anxiety.

Consistent with previous research (Magyar & Duda, 2002), physical self-presentation was also found to be an insignificant predictor of re-injury anxiety during rehabilitation and re-entry into sport. Magyar and Duda (2002) reported physical self-presentation to be the least important source of confidence during the injury process. Previous research suggests that physical-self presentation may be more apparent in specific sports (e.g., individual sports) whereby body types are more likely to be focused upon (Vealey et al., 1998). Therefore, this may be one reason why physical self-presentation was identified as an insignificant source of confidence within this study, as the majority of the participants were involved in team sports, in comparison to individual sports and therefore may have not considered this source of confidence to be effective measure to reduce re-injury anxieties.

Social support displayed an insignificant degree of variance in the prediction of re-injury anxiety during rehabilitation and re-entry into sport. This finding is comparable with other research as social support alone does not significantly have an effect on the severity of the frequency and intensity levels athletes' experience (e.g., worries and concerns about performance). Instead it has a greater expression of satisfaction with social support and lower levels of depression (Lavelle & Flint, 1996). The result from the current study are however contradictory in comparison to other research (e.g., Johnston & Carroll, 1998;

Magyar & Duda, 2000) which has suggested social support is a significant predictor of re-injury anxiety, that can positively increase an athlete's self-confidence. According to Tracey, (2003) different sources of social support including; friends, family, coaches, teammates and medical advisers can influence an athlete's recovery when providing support however, it is dependent upon how athletes perceives and receives the support they obtain from others (Bianco, 2001). This may be one reason why social support was not a significant predictor of re-injury anxiety. According to Johnston and Carroll (1998b) the amount and quality of support received may be a potential factor to influence how athletes interpret and utilise the support given as a successful or unsuccessful recovery tool. Therefore in the current study, athletes may have received insufficient quality of support from others. Although the findings from this study are inconsistent with previous research mentioned above, social support is an important source of confidence for athletes, which needs to be given correctly in order to maximise its effectiveness and reduce re-injury anxiety.

Environmental comfort made no significant contribution to the prediction of rehabilitation re-injury anxiety and re-entry into sport. This is contrasting to previous research (e.g., Magyar & Duda, 2000) which reported environmental comfort to be an important source of confidence, where athletes derive their confidence from factors including; the familiarity of the training room, and the degree of ease with the training room. This could explain why environmental comfort was not a significant source of confidence as in relation the current study; athletes may not have felt at ease with the environmental comforts, due to the unfamiliarity of being injured and the difficult tasks that may be involved within the injury process.

Leadership also emerged as a source of confidence that was not a significant predictor of re-injury anxiety. This finding is contrasting to previous research, whereby injured athletes have reported a coach's/physios leadership to be a salient source of confidence (Magyar & Duda, 2000). Magyar and Duda (2000) suggest that injured athletes can develop greater levels of confidence from the perceptions of the coach/athletic trainer's leadership abilities. It is therefore somewhat surprising that in this current study leadership was not a significant source of confidence to predict re-injury anxiety. According to Magyar and Duda (2000) leadership and other sources of confidence (e.g., social support and environmental comfort) combined can influence the effectiveness of the injury process despite an athletes' task of ego orientation. This is again contrasting to the current study as all three sources (e.g., leadership, social support and environmental comfort) were reported as

insignificant predictors of re-injury anxiety. Future research may therefore want to explore how these environmental sources of confidence contribute to an athlete's re-injury anxiety responses (e.g., frequency and intensity).

5.3 Strengths and limitations

The current study has a number of strengths and limitations. For example, unlike previous research which has primarily focused upon athlete's sources of confidence and self-efficacy throughout the injury process (e.g., Vealey et al., 1998; Hays et al., 2007), the current study investigated an area within sports psychology, whilst accounting for athletes' confidence and re-injury anxiety during the rehabilitation and re-entry into sport, which has previously received limited attention. Additionally, this study is likely to provide greater understanding and further knowledge to this area involving the sources of sport-confidence and re-injury anxiety within the injury process (e.g., rehabilitation and return to sport).

A possible strength of the present study was the heterogeneous sample as the study consisted of males (N=21) and females (N=19). However, this can also be seen as a possible limitation of the study as the sample size was not of a large enough scale. According to Field (2013) every predictor variable in the model used in regression should have a minimum of 10 cases of data.

Another strength of the current study was the use of questionnaires. Gratton and Jones (2010) believe questionnaire scales enable athletes to answer questions anonymously and in a confident non-bias manner. Despite this to be a strength of the study, the reliability of the questionnaire in (e.g.,M-SSCQ; Magyar & Duda, 2002) can be question as the situational favourableness subscale and item three of leadership were remove from the data analysis as they did not meet the criteria of Cronbach's alpha of above .7 (Nunnally, 1978). Therefore caution is advised when interpreting the results.

Another limitation of the current study was the criteria set for participants to be involved in the study. The criteria was not specific enough, as it stated athletes could take part in the study if they had been injured in sport which prevented them from participating in their regular sport for no less than two weeks. The criteria did not take into consideration how long athletes had since returned to sport following injury. Therefore, it can be argued that

the answers given may not have been reliable, as memory loss could have played a role to the answers of the questionnaires used within the study (e.g., M-SSCQ and RIAI).

5.4 Practical Implications

In contrast to previous research, the current findings suggest none of the eight sources of confidence were significant predictors of re-injury anxiety as mentioned earlier in in the chapter. Although many researchers have reported an athlete's sources of confidence to be significant predictors of re-injury anxiety (e.g., vicarious experience, mastery, demonstration of ability and physical and mental preparation) whereby an athlete's negative emotions associated within the injury process can decrease (Magyar & Duda, 2000). The findings within this study oppose these findings as the overall regression model was insignificant. As a result of the findings from the current study, practitioners should be cautious when encouraging these sources of confidence to injured athletes, as this could increase an athlete's re-injury anxiety levels which may consequently impede their performance in a debilitative manner.

The findings of the current study also suggest that practitioners should be aware of an athlete's social support networks (e.g., family, friends, teammates, coaches and medical advisors). Although the current study reported social support as an insignificant predictor of re-injury anxiety, it has been identified by researchers as an important source of confidence within the injury process to decrease the intensity of re-injury anxiety (Holt & Hoar, 2006). Practitioners need to be aware of the different sources of social support and the importance of 'optimal matching', as this has been found as most beneficial when the correct social support matches the individual's needs (Curtona & Russell, 1990). Curtona and Russell (1990) suggest If an athlete is to receive incorrect social support, this can be detrimental to an athlete's performance within the injury process and can heighten an athlete's emotions such as; pressures, stress worries and anxiety. Therefore, it is important for practitioners to select the appropriate social support which matches the injured athlete's needs, as this will decrease re-injury fears and concerns.

5.5 Recommendations for further research

Recommendations for further research can be generated from the limitations within this study. Firstly, as the results showed possible underlying implications for the validity of the modified version of sources of sport questionnaire (M-SSCQ). Based on the Cronbach alphas that did not meet the criteria of .7 or above (Field, 2009) found in the current study (e.g., situational favourableness), which is also similar to previous studies such as Magyar & Duda (2000) and Vealey et al, (1998), there is a need to carry out a larger scale study to investigate the reliability of the M-SSCQ within an injury context.

As the current study reported all eight sources of confidence to have no significance placed upon the prediction of re-injury anxiety, it may be beneficial for further qualitative and quantitative research to be conducted in this area, using a larger sample size. Highlighted as a limitation within the study, a greater number of participants may allow findings to be generalised to the wider population.

Further research may want to explore the temporal nature of an athlete's response to injury (Bianco, 2001). To do this researchers may want to custom a longitudinal study, as this will allow the sources of confidence and re-injury anxiety responses to be explored throughout the different stages of the injury process such as the injury onset, rehabilitation and return to sport. Research may also want to consider aspects beyond the return to sport phase, as this may generate more specific findings.

Finally, another recommendation for future research may want to consider the different genders of athlete's, as previous confidence research has suggested that different gender athletes may interpret the sources of confidence used differently, and may therefore determine different sources of confidence as facilitative or debilitative to their performance (Kingston et al., 2010). However, to date, no research has explored this area to find any significant gender effects of re-injury anxiety within the injury process. Therefore, future research may want to investigate the relationship between gender and the sources of confidence and re-injury anxiety that are experienced within the injury process.

CHAPTER SIX

CONCLUSION

6.1 Conclusion

To conclude, the present study investigated the relationship between an athlete's sources of confidence and re-injury anxiety within the injury process. The findings suggest that none of the eight sources of sport-confidence significantly contributed to the prediction of re-injury anxiety during rehabilitation and re-entry into sport. Although vicarious experience displayed the highest correlation between re-injury anxiety rehabilitation, the overall regression model was not significant, therefore caution is advised when interpreting the results. The findings of the current study provide coaches and practitioners with information, which suggests that certain sources of confidence are more debilitative to athlete's re-injury anxiety and possess a higher threat to performance than other sources. Therefore coaches and practitioners should work together and steer away from these negative sources of confidence within the injury process. However, it is important to note that all athletes are different; therefore these findings should be interpreted with caution. Future quantitative and qualitative research is required to help athletes during the rehabilitation phase and throughout the transition from the injury process and return to sport once athletes are fully recovered.

Finally, as the current study provides generalised findings such as; different levels of injury severity, elite and non-elite different gender athletes. Future research may aim to focus upon these aspects, as these factors could affect an athlete's re-injury anxiety within certain situations. Therefore, it is clear that further research is needed to help athletes within the injury process and injury process and the return to sport. Overall, the findings from the current study found no significant relationships between the sources of confidence and re-injury anxiety during injury rehabilitation and return to sport. Therefore, in order to attain more specific findings in relation to re-injury anxiety, further research is required which may also want to investigate other psychological variables that may influence re-injury anxiety.

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APPENDECIES

APPENDIX A

ETHICAL APPROVAL

When undertaking a research or enterprise project, Cardiff Met staff and students are obliged to complete this form in order that the ethics implications of that project may be considered.

If the project requires ethics approval from an external agency such as the NHS or MoD, you will not need to seek additional ethics approval from Cardiff Met. You should however complete Part One of this form and attach a copy of your NHS application in order that your School is aware of the project.

The document ***Guidelines for obtaining ethics approval*** will help you complete this form. It is available from the Cardiff Met website.

Once you have completed the form, sign the declaration and forward to your School Research Ethics Committee.

PLEASE NOTE:
Participant recruitment or data collection must not commence until ethics approval has been obtained.

PART ONE

Name of applicant:	Holly James
Supervisor (if student project):	Owen Thomas
School:	School of Sport
Student number (if applicable):	ST20023513
Programme enrolled on (if applicable):	Sport and Physical Education
Project Title:	The sources of sport-confidence and re-injury levels experienced by injured athletes during injury rehabilitation.
Expected Start Date:	30.09.2014
Approximate Duration:	7 Months
Funding Body (if applicable):	N/A
Other researcher(s) working on the project:	N/A
Will the study involve NHS patients or staff?	No
Will the study involve taking samples of human origin from participants?	No

In no more than 150 words, give a non-technical summary of the project
Recent literature has explored the psychological responses within the injury process, which has highlighted psychological responses change over time and are affected by variable factors such as, age, gender, severity of the injury, time of the incident to injury, the coaches and teams response to the injured athlete Evans & Hardy, 1995; Weise Bjornstal, Smith, Shaffer & Morrey, 1998; Bianco, Malo & Orlick, 1999; Tracey, 2003. However, little research has underpinned the effect sources of sport confidence have on the athlete's re-injury anxiety response (I.e. the intensity and frequency levels) during within the injury process This study will therefore investigate an athlete's sources of confidence and re-injury anxiety within the injury process.

Does your project fall entirely within one of the following categories:	
Paper based, involving only documents in the public domain	No
Laboratory based, not involving human participants or human tissue samples	No
Practice based not involving human participants (eg curatorial, practice audit)	No
Compulsory projects in professional practice (eg Initial Teacher Education)	No
If you have answered YES to any of these questions, no further information regarding your project is required. If you have answered NO to all of these questions, you must complete Part 2 of this form	

DECLARATION: **I confirm that this project conforms with the Cardiff Met Research Governance Framework**	
Signature of the applicant:	Date:

H. James	30.04.2014
FOR STUDENT PROJECTS ONLY	
Name of supervisor: Owen Thomas	Date: 29.10.2014
Signature of supervisor: 	

Research Ethics Committee use only		
Decision reached:	Project approved	☑
	Project approved in principle	☐
	Decision deferred	☐
	Project not approved	☐
	Project rejected	☐
Project reference number: 14/5/163U		
Name: O. Thomas.	Date: 19/10/2014	
Signature: 		

Details of any conditions upon which approval is dependant:

Click here to enter text.

APPENDIX B

PARTICIPATION INFORMATION SHEET

Participant Information Sheet

Title: An investigation between athlete's sources of confidence and re-injury anxiety within the injury process.

Background:

The study that you are being asked to participate in is entirely voluntary and as a participant you have the right to withdraw at any point.
The study is aimed to gain data which will enable researchers and practitioners to gain information on how athletes respond psychologically during the injury and rehabilitation process. As a participant you will be asked complete a series of questionnaires in one sitting. The time it will take is approximately twenty minutes. The specific instructions for each questionnaire are provided within the booklet.

Why have you been asked?:

You are being asked because you are an athlete with a previous or current injury.

Are there any risks?:

There are no foreseen risks associated with undertaking this study. If you are feeling unwell, it is advised that you don't take part. Also - if at any point during the study you want to withdraw your participation then that is fine, just let me know if you wish to withdraw. Finally, if there is one particular question or one particular questionnaire you do not wish to complete then that is fine.

How will I protect your privacy?:

All data collected will be kept in a secure place and participant's names will not be used. Instead participants will be referred to as participant A etc. All data will be stored in line with the data protection act (1998).

Further information

If you have any questions about the research please feel free contact me on :

hollyjames21@outlook.com

APPENDIX C

INFORMED CONSTENT FORM

Cardiff Metropolitan University

INFORMED CONSENT FORM

Title of Project: An investigation between athlete's sources of confidence and re-injury anxiety within the injury process.

Name of Researcher: Holly James

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 confidence and re-injury anxiety response following a sporting 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 QESTIONNAIRE (M-SSCQ)

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
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 QUESTIONNAIRE (RIAI)

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
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	0	1	2	3	1	2	3	4	5	6	7

	rehabilitation make my body feel tense											
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
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