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| **Programme:**             | SPE                                   |

| **Dissertation title:**    | A comparison of confidence in team and individual athletes during the injury rehabilitation process |

| **Supervisor:**            | Dr Owen Thomas                        |

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| **Title and Abstract (5%)**| **Title to include:** A concise indication of the research question/problem.  
**Abstract to include:** A concise summary of the empirical study undertaken.  |

| **Introduction and literature review (25%)**| **To include:** outline of context (theoretical/conceptual/applied) for the question; analysis of findings of previous related research including gaps in the literature and relevant contributions; logical flow to, and clear presentation of the research problem/ question; an indication of any research expectations, (i.e., hypotheses if applicable).  |

| **Methods and Research Design (15%)**| **To include:** details of the research design and justification for the methods |

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Results and Analysis (15%) ²
To include: description and justification of data treatment/ data analysis procedures; appropriate presentation of analysed data within text and in tables or figures; description of critical findings.

Discussion and Conclusions (30%) ²
To include: collation of information and ideas and evaluation of those ideas relative to the extant literature/concept/theory and research question/problem; adoption of a personal position on the study by linking and combining different elements of the data reported; discussion of the real-life impact of your research findings for coaches and/or practitioners (i.e. practical implications); discussion of the limitations and a critical reflection of the approach/process adopted; and indication of potential improvements and future developments building on the study; and a conclusion which summarises the relationship between the research question and the major findings.

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ABSTRACT

The aim of the current study was to investigate the difference in self-confidence levels between team and individual sports athletes following injury. Secondly, to find out if any differences in the sources confidence used during rehabilitation are present between both sport-types. 21 previously injured athletes (n=21) that compete in team based sports (n=11) or individual based sports (n=10) participated. Both groups completed the Trait robustness of sports confidence inventory (TROSCI; Beattie et al., 2011) and the modified sources of sport confidence (M-SSCQ; Magyar & Duda, 2000). An independent samples t-test was conducted to assess the trait confidence levels between the two sport types. Results from this analysis found no significant difference between the two types of sport although individual based sports athletes reported higher self-confidence levels. A one-way analysis of variance (ANOVA) was conducted to examine the differences in the sources of confidence utilised between sport-types. Results from the ANOVA found team based sports athletes emphasised a significantly higher importance on social support (p=0.02). In contrast, individual based sports athletes placed a higher importance on mastery although statistically insignificant (p=0.56). Both sport type ranked mental/physical preparation as the second most important source of confidence. These findings suggest that certain sources of confidence are important to both types of sport. However, certain sources of confidence are more important to one type of sport and not the other. From a practitioners perspective these results can potentially help improve interventions by basing these around the sources of confidence that each sport-type view as important. Future research adopting a repeated measures approach could provide further knowledge by finding if the importance of different confidence sources change throughout rehabilitation.
CHAPTER 1.0
INTRODUCTION
1.1 Sport-injury

Participation in sport has risen (Smith & Milliner, 1994) therefore; it can be assumed the prevalence of sporting injuries has increased. These, athletic injuries involve both physical and psychological trauma (Chung, 2012). Naturally due to the traumatic nature of physical injury little attention is focused on the cognitive states of the athlete. This explains why some athletes are not mentally prepared to re-enter competitive sport once the physical site of the injury has recovered. As a consequence, the body of research focused on the psychological aspects of sporting injury has enlarged (Leddy, Lambert & Ogles, 1994).

1.3 Self-confidence and injury

Research has generally focused on athlete’s behavioural and emotional responses to injury (e.g. Wiese-Bjornstal, Smith, Shaffer & Morrey, 1998). Research has previously alluded to the important role self-confidence plays within an injured athlete’s rehabilitation experience (e.g. Hays, Thomas, Maynard, Bawden, 2009; Wadey & Evans, 2011) and ability to perform post-injury. For example, Hemery (1986) suggested that 90% of successful achievers have high self-confidence levels. In contrast, it can be assumed that low self-confidence can be detrimental to performance. As tennis star Juan Martin Del Potro explained regarding confidence within the injured wrist that occurred not long after winning the US Open.

*I just need time to practice my backhand again, trying to get confidence on my wrist, because I lost the muscles, I lost the confidence.*

*If I hit my backhands without confidence, I resort to hitting slices or different strokes. That isn’t good enough to play at this level* (Del Potro)

Football star Aaron Ramsey spoke about the psychological impact and performance detriments due to a broken leg.

*Physiologically it was massive. It took me a few years to get over that, to overcome that. Up until last season I think. I did try to force things when things weren’t going right in games. I did lose my confidence* (Aaron Ramsey).
Injured athletes regularly experience fears or anxieties over possible re-injury (Bianco, Malo & Orlick, 1999). These worries can even cause re-injury (Heil, 1993). Therefore, confidence in the previously injured limb coping with the sporting demands influences success in sport post-injury and likelihood of re-injury. Self-confidence as a construct has repeatedly evolved as research has progressed from general feelings of self-efficacy to sport-specific confidence in later research. Within a sporting environment this relates to the belief of being able to achieve sporting success. Although previous research has focused on self-confidence within sport, the sources from which confidence is derived has received little attention. Limited research studies have investigated sources of confidence that are salient between genders (e.g. Kingston, Lane & Thomas, 2010) and skill level (e.g. Hays, Thomas, Maynard & Bawden, 2007). However, little is known about the influences of sport type on confidence levels and from which sources confidence is derived during and after injury.

Therefore, the aim of the current study is to investigate if any statistical differences are apparent in trait confidence levels between sport types following injury. The second aim is to establish if any underlying significant differences in which sources of confidence are utilised between sport-types during rehabilitations. Twenty one athletes were recruited and completed the Trait robustness of sports confidence inventory (TROSCI) and the modified sources of sport-confidence (M-SSCQ) inventory.
CHAPTER 2.0

LITERATURE REVIEW
2.1 Introduction

The section will begin by delving into previous literature focused on athlete’s injuries, specific to the psychological responses to injury that athletes endure. Following this a critical review of the sports confidence literature will be conducted discussing the early research on self-efficacy, self-confidence and later research on sources of confidence. The final section discusses the role confidence plays when athletes return to sport post injury. Based on the previous findings the rationale for the current study will be formed.

2.2 Athlete’s Injury in Sport

Participating in any form of sporting activity will expose the individual to the risk of becoming physically injured (Tracey, 2003). Physical Injury can reduce an athlete’s self-confidence, consequently debilitating post injury performance (Podlog & Eklund, 2006). This highlights the importance of the psychological component during an athlete’s recovery from injury (Maygar & Duda, 2000) and ensuing sporting performance (Hays et al., 2007; Koehn, Pearce & Morris, 2013). Previous research has found that some athletes are physically but not psychologically ready to re-enter competition (Podlog & Eklund, 2006). Therefore, it has been established that high levels of confidence during an athlete’s return to competition from injury is important (Wadey & Evans, 2011). Although the link between confidence and successful rehabilitation is known, influence of variables such as sport-type has received little research attention.

2.3 Psychological responses to injury

Injury can be perceived as a stressful event (Mitchell, 2011). Potentially this causes substantial psychological impact upon the athlete (Johnston & Carroll, 1998). The stressors related to the event can induce responses such as decreased self-esteem and increased depression (Leddy et al., 1994; Mcgowan, Pierce, Williams & Eastman, 1994; Smith et al., 1993). Different factors influence the stressors prompting temporal changes from injury onset through to return to competition. One study has investigated this between five individual (golf) and five team (rugby) based athletes. Evans, Wadey, Hanton and Mitchell (2012) found team sports athletes experienced selection worries during injury onset. In contrast, the individual sports athletes stressed over feelings of isolation. When the athletes returned to sport stress over coping with the sporting demands was
experienced by both groups. These results provide important implications to sport psychologists. These findings can be used to educate athletes about using intervention strategies (e.g. goal setting) potentially improving coping with stressors. Multiple studies have found this to increase athlete motivation, self-confidence and treatment, rehabilitation and self-efficacy (Evans & Hardy, 2002; Copal & Brewer, 2001). However, advised caution is advised when interpreting these results due to the differing physical nature of golf and rugby.

Intensity of emotions similarly changes temporally (Wade & Evans, 2011). Athletic injury can cause negative self-perceptions of one’s abilities, self-esteem and self-worth (Wiese-Borstal et al., 1998). Chan and Grossman (1988) aimed to quantify self-esteem changes among runners. This study found lower self-esteem within the injured runners (2 weeks or more) than uninjured. Later research by McGowan et al. (1994) supported this when 16 footballers scored significantly lower self-worth scores than 13 non-injured players. This potentially resulted from footballers place in the team being pressurised. These self-perceptions of efficacy besides confidence are an important influence on athlete’s responses to injury (Wiese-Borstal et al. 1998) and subsequent success in rehabilitation.

2.4 Conceptual Models of Response to Injury

Several conceptual models have been developed to increase understanding of the psychological responses to injury. During a period of little empirical evidence situational and personal factors within Weiss and Trowel’s (1986) model were the focus of research related to injury stress. The increased research attention in psychological responses to injury besides personal and situational factors resulted in Wiese-Bjornstal et al.’s. (1998) integrated model of response to injury displayed in figure 1. This model illustrated the stress-process as a combination of prediction of injury components (pre-injury) and responses (post-injury). A combination of pre-injury factors (personality, history of stressors, coping resources, and interventions) and post-injury factors (coach and team influence) combine to affect behavioural, cognitive and emotional responses towards injury. Identified by Wiese-Bjornstal et al. (1998) were multiple practical implications. Examples include research reaching a consensus on a definition of sport-injury. Secondly, to determine if research interest lies with psychological response to injury or athlete’s responses sport injury. These responses are constantly appraised by the injured athlete (Tracey, 2003). The subsequent effects depend upon the perception
of the stress. Those who perceive stress (injury) as challenging display less emotional disturbance than those who perceive the stress as threatening (Chung, 2012).

Despite this earlier research there is limited understanding of an injured athlete’s appraisal of the injury initially or about one’s ability to cope with the injury (Albinson & Petrie, 2003). Tracey (2003) suggested the physical site of injury occurrence is the focus of athlete’s appraisal attention. Potentially this undermines the psychological effects. Athlete’s appraisals of coping influence recovery and progression through rehabilitation (Crossman, 1997). These appraisals constantly change as rehabilitation progresses (Morrey, Stuart, Smith & Wiese-Bjornstal, 1993). Therefore, suggesting injury appraisal and responses follow a temporal pattern. Previous research has focused on emotional responses to injury (Evans & Hardy, 2002; Johnston & Carroll, 1998; Podlog & Eklund, 2006).

Research findings commonly reported responses from cognitive appraisals during injury onset such as anger, shock, anxiety, and depression. These change during rehabilitation to frustration, relief, guilt and apathy. Later these are replaced by confidence level fluctuations, impatience and re-injury anxiety during the return to sport. The temporal appraisals of the injury result in temporal changes in self-confidence s. Initially, reductions in self-confidence are experienced during injury onset (J.Taylor & S.Taylor, 1997) before increasing once an athlete has fully recovered from injury (Podlog & Eklund, 2006). These
confidence fluctuations within sport are based upon individual perceptions. Examples include making it back into the team as found by Evans et al. (2000) or beliefs of beating individual opponents that one would beat pre-injury. Social support made available to injured athletes similarly influences self-confidence. This is because significant others become an important source of confidence (Magyar & Duda, 2000). For example informational support from physiotherapists towards the middle and end of rehabilitation (Fisher, 1988; Johnston & Carroll, 2000) influence injured athletes rehabilitation beliefs and self-confidence (Johnston & Carroll, 1998; Niven, 2007). Beside self-confidence rehabilitation beliefs are vital for a successful return to sport from injury (Niven, 2007). Therefore, restoration of confidence is important during the return to sport from injury. Due to self-confidence’s effect on successful sporting performance, the roles of situational factors for example social support in facilitating confidence are evident.

2.5 Sport Confidence & Self Efficacy

Self-confidence is consistently related to successful sporting performance across the sport psychology literature (Feltz, 2007). It is established that positive self-confidence associates with positive responses whereas, low self-confidence associates with negative responses. These negative effects include depression, dissatisfaction and anxiety (Martens, Vealey & Burton, 1990; Vealey & Campbell, 1988; Vealey, Hayashi, Garner-Holman & Giacobbi, 1998). In contrast, high confidence levels protect cognitively anxious performers (e.g. re-injury anxious) from performance drops (Hardy, 1990; Hardy, 1996). Behaviours such as increased effort, persistence generally (Hays et al., 2009) and in achieving goals (Bandura, 1986) have been linked with high self-confidence levels. These behaviours are important factors for successful rehabilitation and return to sport from injury. Restoring confidence beliefs fully during the return to sport is vital (Magyar & Dude, 2000) in all types of sport but potentially for different reasons. For example, individual sport players are solely responsible for the sporting outcome. Subsequently, Woodman and Hardy (2003) suggested self-confidence is more important to individual sports athlete’s performance than team sports. This contradicted Carron’s (1982) earlier work. Therefore, individual athlete’s trait confidence would be higher. Zeng (2003) contradicted Woodman and Hardy’s (2003) suggestion by finding team sports players possessed higher levels of self-confidence which supported Carron’s (1982) earlier work. Due to no reasoning for these findings related to sport-type being provided future research is suggested to focus on providing further understanding of self-confidence differences between team and individual.
sports by a) involving more sports; b) Including both genders; and c) using more statistical methods of analysis. Besides confidence beliefs Magyar & Dude (2000) suggested the importance of restoring self-efficacy beliefs prior to returning to sport. Self-efficacy plays a key role in reactions to stress and the quality of the coping in threatening situations (Bandura, 1997).

Self-efficacy is one’s perception of the capability to attain a certain level of performance (Felts, Short & Sullivan, 2008). Restoring efficacy expectations involves restoring athlete’s confidence to a level in which they are comfortable returning to sport (Bandura, 1990). Appraisal of self-efficacy is a complex process (Bandura, 1990) and beliefs from this appraisal determine individual’s thoughts, feelings, self-motivation and behaviours (Bandura, 1994). This led to numerous researchers finding a relationship between higher self-efficacy levels and better adherence to rehabilitation programs (Chen, Neufeld, Feely & Skinner, 1999; Wood gate, Brawley & Weston, 2005). Multiple factors influence the appraisal of self-efficacy (Bandura, 1990). Originally four sources of efficacy information were identified (see figure two). Later research increased this to six factors. The adapted model included the factors vicarious experiences; imagine experiences; enactive mastery experiences; verbal persuasion; and perception of physiological and emotional states (Bandura, 1997; Maddux & Joselin, 2003).

![Figure 2. Bandura initial model of self-efficacy](image-url)
Influences to self-confidence and efficacy have been found in which mastery experiences has been found to be the strongest predictor (Magyar & Dude, 2000). In contrast, Perjures (1996) previously found self-efficacy beliefs varied greatly between individuals therefore assessing individual’s sources of self-efficacy is difficult. Although, Bandura’s self-efficacy theory has been helpful in examining sources of self-efficacy. The lack of sport-specificity raised queries amongst researchers as to whether the sources are salient to athletes within a sporting context (Magyar & Dude, 2000; Hays et al., 2007).

Criticism of self-efficacy theory led Veale (1986) to develop the first model of sport-specific confidence (see figure three). The sport-confidence model defined sport-confidence as an athlete’s belief or degree of certainty that one possesses the ability to perform successfully in sport (Veale, 1986; Veale & Chase, 2008). This is a noticeable difference from self-efficacy theory because sport-confidence adopted a sport-specific concept instead of a general self-confidence concept.

![Figure 3. Vealey's (1986) first framework of sport-confidence](image)

Two constructs being trait (SC-trait) and state (SC-state) were identified within sport-confidence; the dispositional construct competitive orientation was also included. This refers to the types of goals athletes aim for within competitive sport (Martin & Gill, 1991; Veale et al., 1998). The model predicted that the interaction between dispositional confidence (SC-trait) and competitive orientation would evoke state-sport confidence (SC-state). When testing this prediction Martin & Gill (1991) disagreed finding SC trait was a superior predictor of sporting behaviour and performance than SC-state. Although the conceptual model and construct of sport-confidence were studied in terms of mediating
processes and multiple effects (Veale, 1986; Veale & Campbell, 1988) the sources from which sport-confidence were derived were not included.

### 2.6 Sources of confidence

The limitations of the previous model encouraged Veale et al. (1998) to develop a more advanced sport-confidence framework (figure four). This model regarded sport-confidence as a single construct.

The reconceptualised model suggested organisational culture and individual characteristics such as athlete’s personality influence are where confidence is derived from (Veale et al., 1998; Veale & Chase, 2008). A four phase study collecting data on 500 collegiate and high school athletes identified 9 salient sources of confidence within three broad domains. Mastery and demonstration of ability fell within the achievement domain. The self-regulation domain included mental and physical preparation. The final domain social climate consisted of social support; vicarious experience; coach’s leadership; environmental comfort; and situational favourableness. Although Veale focused on the competitive side of sport besides social influences, similarities between Veale’s sources of sport confidence and Bandura’s sources of efficacy beliefs were found (Veale et al., 1998; Veale & Chase, 2008). Examples include both theories identified mastery and vicarious experience as important sources of self-confidence/efficacy.
Inconsistencies when repeating the nine source measure of confidence using the sources of sport confidence questionnaire (SSCQ) prompted Hays et al. (2007) to recommend future studies to investigate sources of sport-confidence amongst differing sport levels. This led to Hays et al. (2007) qualitative investigation of 14 world-class athletes. This study comprised of 12 individual sports players and 2 team sports players. Both Veale and colleagues along with Hays and colleagues identified coaching and social support influences on confidence. However, within world class athletes several differing sources of confidence were found. These include; innate factors; performance accomplishments; experience; competitive advantage; self-awareness; and trust. As highlighted by previous research (e.g. Veale et al., 1998; Wilson, Sullivan, Myers & Felts, 2004) confidence is influenced by the context the athletes are within. This prevented generalization to other athlete populations. One other limitation is the lack of balance between individual (n=12) and team (n=2) sports players involved. This similarly prevented generalization of the results between sport types. Research within team and sports player’s sources of confidence is scarce. Therefore a quantitative study utilising a larger sample size could increase understanding of which sources of confidence are salient between sport types.

Confidence levels amongst athletes have also been found to change temporally dependant on the current phase of competition (pre, during, post). This is because athletes are constantly cognitively involved within each phase. An example is Kingston et al.’s. (2010) 54 elite individual sports players sample during pre-competition. Demonstration of ability was salient 3 weeks prior to competition whereas physical and mental preparation and self-presentation were important 1 week prior to competition but not 6 weeks pre-competition (Kingston et al., 2010). The sources that athlete’s base their confidence beliefs from can influence the stability of their sport-confidence. Deriving confidence from uncontrollable sources may promote weakened or unsteady judgements of control and ability; whereas deriving confidence from controllable sources (e.g. mastery) promotes stable sport-confidence beliefs (Hays et al., 2009). Therefore, understanding and altering where athletes derive confidence from temporally is crucial to intervention methods aiming to increase confidence (Veale et al., 1998).
2.7 Self Confidence When Returning from Sport Injury

Confidence is suggested to be one of the most important factors in a complete and successful return from injury (J.Taylor & S.Taylor, 1997). However, given that the importance of confidence to successful rehabilitation is known, surprisingly little research has investigated this. Similarly, the period of return to sport is a critical phase of rehabilitation that remains under-researched (Evans et al., 2000). Based on the limited-research within confidence’s impact on successful-rehabilitation Magyar and Duda (2000) investigated the sources of confidence and their relative impact on confidence restoration following athletic injury. 40 injured inter-collegiate athletes completed a modified version of Vealey et al’s. (1998) SSCQ. Results found the most salient sources of confidence were the perceived leadership qualities of the athletic trainer and the athlete’s degree of comfort within the training environment. Other sources that had an effect include mastery, vicarious experience, demonstration of ability and various forms of persuasion (e.g. verbal persuasion, mental and physical preparation). Support for Magyar and Duda’s findings arose amongst a sample of 3 rugby players in which Evans, Hardy and Fleming (2000) found the same salient sources of confidence where utilised although identified in different terms. Examples include the rugby players deriving confidence from simulation training to demonstrate ability and to gain confidence within the injured limb to physically prepare for the return to sport.

It has also been acknowledged that the types of goals athlete’s used and how this related to the sources of confidence used has an important role. For example Evans, Hardy and Fleming (2000) found process/task goals within sport facilitated athletes focus on specific aspects of a task. This promoted sources of confidence such as mastery due to the self-referenced nature of process goals (Magyar & Duda, 2000). The practical implication of these findings is to reiterate the importance of using task/process goals such as sport specific limb movements during rehabilitation. This is because of the relationship between process goals and higher intrinsic motivation and rehabilitation adherence. The longitudinal nature of Evans, Hardy and Fleming’s (2000) study is a particular strength because it assessed the confidence of the sample throughout the injury process. Therefore, this allowed the most salient sources of confidence used at different injury phases to be examined. A number of limitations were identified. Although these findings bridged the gap in understanding of athlete’s confidence when returning to injury individual differences influence the responses to injury and the subsequent return to competitive
sport (Gallagher & Gardner, 2007). Recently, research has acknowledged the role of informational support as a source of confidence. Carson and Polman (2008) identified this type of social support as important in the case of a professional rugby player returning from ACL surgery. This came in the form of reassuring the athlete that the injured limb can withstand the sporting demands. This increased self-confidence in the athlete’s physical fitness and reduced re-injury worries. A more recent study by Wadey and Evans (2011) found similar results in which informational support from medical personnel improved athlete’s confidence in the injured limb withstanding the sporting demands.

Based on previous research it can be assumed a multitude of sources of confidence are used during an athlete’s injury onset through to return to sport. However, when measuring this concept only Magyar and Dude (2000) used the sources of confidence information suggested by researchers such as Veale et al. (1998). Most studies used a qualitative design for example Evans, Hardy and Fleming (2000). This provides scarce evidence to assume which sources of confidence athletes used during rehabilitation from that can be generalized to this population. Since the development of the sport-confidence model research has compared sport-confidence between gender (Hays et al., 2007; Kingston et al., 2010) and investigating how the competitive level of the athlete influence from which sources confidence is derived from. The importance of sport type on sport-confidence and the sources confidence is derived from is the next logical research direction. Research has highlighted factors such as organisational and socio-cultural that potentially influence the source of confidence used but this cannot be assumed to be consistent between individual and team sports due to the differing demands. Therefore, this study’s purpose is to investigate the difference in confidence levels between team and individual sports players following injury. Secondly, to investigate the sources of confidence used between sport type during rehabilitation.
3.1 Research Design

The purpose of the current study was first to investigate the difference in self-confidence levels between team and individual sports athletes following injury. Secondly, to establish from which sources confidence was derived from during injury rehabilitation between different sport types. A cross-sectional quantitative approach was used during this study because it allowed for in-depth data to be gathered that could be illustrated and generalised to the wider population (Kumar, 2011). Measurement of the dependant variables used administration of the Trait Robustness of Sports Confidence Inventory (see appendices C) developed by Beattie, Hardy, Savage, Woodman and Carlo (2011). Secondly, administration of Magyar and Dude’s (2000) modified sources of sport confidence questionnaire (see appendices D). Within descriptive research questionnaires allow for gathering of large quantities of data and in-depth analysis of this data (Thomas & Nelson, 2001) as well as maintaining participant’s anonymity. Anonymity of participant’s answers can increase the likelihood of receiving accurate information during sensitive questions (Kumar, 2011). The above reasons were the rationale for questionnaires being the chosen method of data collection.

3.2 Participants

A carefully selected sample that met specific criteria was included in the study. Requirements to participate were a) the athlete sustained an injured that prevented participation in sport for at least 2 weeks, and b) the athlete returned to competitive sport following the injury. The participants (N=21) included male (N=13) and female (N=8) athletes with an age range of 18-33 (Mean= 20.76, Standard Deviation= 3.16). The athletes experienced a range of injuries including torn muscles, dislocations and ruptured ligaments. A split of individual (N=10) and team (N=11) was present within the sample in which competed or currently compete at club (N=3), regional (N=12), national (N=3) or international (N=3) level.

3.3 Measures

TROSCI. The TROSCI (Beattie et al., 2011) measure assessed the participant’s ability to remain confident even in situations of adversity (e.g. injury). 8 items were measured with responses ranging from 1 (strongly disagree) to 9 (strongly agree). Structural validity for this measure was confirmed using Maria’s coefficient (Kurtosis z=3.09, p<0.1). This indicated the data departed from a multivariate normality and a high internal consistency
(α=.88) was reported. Beattie et al. (2011) tested the convergent validity of the TROSCI against the TSCI and found the two measures did not cross load. This was proven with a correlation of .44. Finally, internal reliability of the measure was high (α=.90) when re-tested.

**M-SSCQ.** The modified version of the SSCQ used by Magyar and Dude's (2000) based on Vealey et al's. (1998) original SSCQ measure was used. This measured the participant’s confidence during rehabilitation and what factors helped them feel comfortable during rehabilitation. This measure was modified to base the questions on confidence during injury rehabilitation from findings that previous research had found on injury stressors. Modifications to certain subscales were made due to reliability issues. The situational favourableness subscale was removed entirely due to low reliability (.67, .45, and .71). The item ‘follow certain rituals’ was removed from the environmental comfort subscale. As a consequence reliability improved to an acceptable score (.87, .86, and .89). Similarly within the trainer’s leadership subscale the ‘know my trainer is a good leader’ item was removed. Subsequently, this increased reliability (.92, .93, and .91) to an acceptable score. 43 items were used in the M-SSCQ, response scores ranged from 1 (Not at all) to 7 (Always) on the scale. Magyar and Dude (2000) reported alphas between .71 and .97 making this a reliable measure to use. Later research by Wilson et al. (2004) similarly found the situational favourableness subscale problematic when testing the SSCQ measure. This lead to the removal of two items within the situational favourableness subscale (“getting breaks from officials”) and (“see breaks going my way”). Although the 3rd item reported no relationship to measuring situational favourableness this was kept for its modest loading on environmental comfort. Based on these problems internal reliability testing for each individual subscale of the M-SSCQ is recommended by Field (2000).

### 3.4 Procedure

Ethical approval for this study was granted in June 2013. Individuals who met the inclusion criteria were contacted and asked to participate in the study voluntarily. Questionnaire booklets were administered to participants at a time and location convenient for the participant. Besides the questionnaires participants signed an informed consent form that ensured the participants were adequately aware of the requirements from them in following Kumar's (2011) recommendation. Confidentiality and anonymity was ensured to the participants throughout the study. Participants completed the questionnaire booklet.
which included an information sheet, consent form, demographic information form, TROSCI, SSCQ, and measures of re-injury anxiety, self-efficacy, treatment efficacy, adherence and perceptions of success. If any queries or problems arose the researcher was present to respond. Once the booklet was completed by the participant the questionnaire was collected by the researcher.

3.5 Data Analysis

Internal reliability testing was performed prior to the main statistical testing in-line with Field’s (2009) recommendation. This involved examination of all nine sources of confidence to test the internal reliability against Cronbach’s (1951) accepted alpha score of 0.7 or above. Sources that met this criterion were accepted as having good reliability (Nunnaly, 1978). An independent samples t-test was used to establish any significant differences in trait confidence levels between the individual and team sports players after injury. This was a suitable method of statistical analysis because it allowed comparisons of mean scores that can be used to test the null hypothesis (Howell, 2007). Following this a one way analysis of variance (ANOVA) was used to test for a significant difference between the sources of confidence individual and team sports players utilised during injury rehabilitation. Since an ANOVA allows comparisons of multiple dependant variables in addition to reducing type one errors (Field, 2009) this justified the use of this method of analysis. All the underlying assumptions of parametric tests were assessed prior to performing the ANOVA to guarantee accuracy of the results. Statistical significance was determined and set at p<0.05. All the statistical analysis was undertaken using SPSS for windows and MAC version 20.
CHAPTER 4.0

RESULTS
4.1 Scale Reliability

The internal reliability for each subscale of the M-SSCQ was assessed using Cronbach’s alpha (1951). Acceptable reliability scores were found for demonstration of ability, physical and mental preparation, physical self-perception, social support, vicarious experience and environmental comfort. The scores ranged from 0.72-0.9 (see Table 1). The subscales for mastery and coaches/physiotherapist’s leadership scored an internal reliability of 0.61 and 0.63 respectively. These subscales remained unaltered because low alpha scores are to be expected when testing psychological constructs quantitatively (Kline, 1999). A second reason for the retention of the subscale coaches and physiotherapists leadership was its repeated importance amongst previous sources of confidence research (e.g., Magyar & Duda, 2000; Hays et al., 2007). As a consequence of the lower reliability scores of the two subscales possible caution should be considered when interpreting any significant findings from the main analyse with respect to these subscale results. Situational favourableness scored below 0.5 originally and no removal of a single item would increase this to an acceptable score therefore the subscale was removed. The same assessment of internal reliability for the TROSCI measure reported an acceptable reliability (0.81). Table 1 illustrates the reliability scores of all 9 M-SSCQ subscales and the TROSCI measure.
Table 1. Reliability, confirmation of underlying assumptions test results and Levene's test results

<table>
<thead>
<tr>
<th></th>
<th>Reliability</th>
<th>Zskew</th>
<th>Zkurtosis</th>
<th>Kolomorov-Shapiro</th>
<th>Levene's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>0.61</td>
<td>-1.64</td>
<td>0.50</td>
<td>0.06</td>
<td>0.5</td>
</tr>
<tr>
<td>Demonstration of Ability</td>
<td>0.90</td>
<td>-0.38</td>
<td>-2.22</td>
<td>0.16</td>
<td>0.39</td>
</tr>
<tr>
<td>Physical and Mental Preparation</td>
<td>0.77</td>
<td>-1.56</td>
<td>1.11</td>
<td>0.06</td>
<td>0.46</td>
</tr>
<tr>
<td>Physical Self-Presentation</td>
<td>0.75</td>
<td>-2.63</td>
<td>1.99</td>
<td>0.07</td>
<td>0.25</td>
</tr>
<tr>
<td>Social Support</td>
<td>0.85</td>
<td>-2.78</td>
<td>2.05</td>
<td>0.04</td>
<td>0.20</td>
</tr>
<tr>
<td>Vicarious Experience</td>
<td>0.78</td>
<td>-2.13</td>
<td>1.24</td>
<td>0.03</td>
<td>0.30</td>
</tr>
<tr>
<td>Environmental Comfort</td>
<td>0.89</td>
<td>0.56</td>
<td>-1.10</td>
<td>0.13</td>
<td>0.37</td>
</tr>
<tr>
<td>Coach/Physiotherapist Leadership</td>
<td>0.63</td>
<td>-1.02</td>
<td>2.59</td>
<td>0.03</td>
<td>0.49</td>
</tr>
<tr>
<td>Situational Favourableness</td>
<td>0.42</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TROSCI</td>
<td>0.81</td>
<td>0.35</td>
<td>-0.94</td>
<td>0.02</td>
<td>0.47</td>
</tr>
</tbody>
</table>

4.2 Confirming underlying assumptions

All relevant assumptions of normality were tested before the main analytical tests took place. The first assumption was the population drawn were normally distributed; a random sample was used consisting of 11 team sport players and 10 individual sports players competing between club and international level. Secondly, the assumption of normality was first statistically tested using the frequency of the data entries that assessed the skewness and kurtosis of the data. The TROSCI and 5 of the 9 M-SSCQ subscales reported results between the accepted z-scores of ±1.96. The subscales physical self-perception, social support, vicarious experience and situational favourableness all reported scores below -1.96. The Kolomomorov-Smirnov test was the second statistical
test for normality and found the TROSCI measure along with the M-SSCQ subscales of social support, vicarious experience and leadership to be significantly (p< 0.05) different to a normally distributed set of scores with the same mean. Consequently, caution must be taken when interpreting these results when comparing this to normally distributed data. The homogeneity of variance was the final assumption test and was found to be near equal. All 9 subscales of the M-SSCQ and TROSCI measures reported no significance within the Levene’s test. This suggested homogeneity had been met (Field, 2009). Although caution must be taken when interpreting the above results parametric tests will remain the choice of statistical analysis because the sample group sizes are equal and these measures are robust against non-normality (Field, 2009). Table 1 above illustrates all the confirmation of assumptions analyses.

4.3 Independent samples t-test

Results from the independent samples t-test shown no significant difference (p=0.35) between individual sports and team sports athletes confidence levels following injury. Individual sports players did however report a higher score. TROSCI mean scores and standard deviations are shown in table 4.2.

Table 2. Means and standard deviations for the confidence levels from the TROSCI measure between types of sport

<table>
<thead>
<tr>
<th>Sport Type</th>
<th>Mean</th>
<th>SD</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>39.20</td>
<td>12.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Team</td>
<td>34.27</td>
<td>10.83</td>
<td></td>
</tr>
</tbody>
</table>
4.4 One-way ANOVA results

Results from the one-way ANOVA shown a significant difference within one of the subscales between team and individual sports athletes. This subscale was social support (p<0.02). This refers to social support received from others (e.g. family, other athletes) during rehabilitation. The subscales that scored insignificant scores were mastery, demonstration of ability, physical and mental preparation, physical self-perception, vicarious experience, environmental comfort and leadership. Subscale means, standard deviations and significance values relative to the type of sport are presented in table 4.3.

Table 3. M-SSCQ subscale means, standard deviations and significance values between types of sport

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Type</th>
<th>Mean</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery</td>
<td>Individual</td>
<td>5.22</td>
<td>0.93</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>5.00</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Demonstration of Ability</td>
<td>Individual</td>
<td>2.85</td>
<td>1.53</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>3.39</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td>Physical and Mental Preparation</td>
<td>Individual</td>
<td>5.08</td>
<td>1.29</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>5.36</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>Physical Self-presentation</td>
<td>Individual</td>
<td>4.70</td>
<td>2.11</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>5.15</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>Individual</td>
<td>4.95</td>
<td>1.42</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>6.18</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>Vicarious Experience</td>
<td>Individual</td>
<td>2.64</td>
<td>2.20</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>4.25</td>
<td>1.65</td>
<td></td>
</tr>
<tr>
<td>Environmental Comfort</td>
<td>Individual</td>
<td>4.25</td>
<td>1.81</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>5.11</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>Individual</td>
<td>5.06</td>
<td>1.22</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>Team</td>
<td>5.36</td>
<td>0.85</td>
<td></td>
</tr>
</tbody>
</table>
To summarise the findings, athletes that compete in team sports reported higher mean scores of importance within eight of the nine sources. Team sports athletes placed a significant higher importance in social support ($p<0.02$) in comparison to individual sports athletes. Vicarious experience was close to significance ($p=0.09$) with team sports athletes score this source as more important than individual sports athletes. In comparison, the single source that individual sports athletes placed more importance in was mastery although insignificant ($p=0.56$).
5.1 Introduction

The purpose of the current study was to investigate the difference in confidence levels between team and individual sports players following injury and then to explore the sources confidence that were used during rehabilitation between sport-types. The following chapter discusses the results by first investigating the trait confidence levels between team and individual sports players. Following this, sources of confidence used by the athletes involved in team and individual sports during rehabilitation are contrasted and compared to previous literature. Based on this a discussion of the findings theoretical, conceptual and practical applications are established and explained. The fourth section identifies and explains the limitations within the current study followed by identification of the strengths of the study. Subsequently directions for future research will be suggested within the areas of sources of confidence and return to sport from injury related to team, individual and all sports. The final section will provide an overall conclusion of the study.

5.2 Confidence levels between types of sport

Individual sports player’s possessed higher trait self-confidence levels than team sports athletes although the difference was statistically insignificant. These results are supported by Woodman and Hardy’s (2003) study that found no statistical difference between sport types. Both these studies used both genders and varying skill level when comparing sport type. Therefore, factors such as sex and level of competition potentially have greater influences on confidence than sport type (Woodman & Hardy, 2003). In contrast, Zeng’s (2003) found that team sports athletes possess higher trait self-confidence than individual athletes. A potential reason for the contrast between Zeng’s (2003) and the current study is that Zeng’s study only used male athletes. This potentially provides further evidence that gender has a greater influence of confidence than sport-type.

5.3 Sources from which confidence was derived

The findings from this study coincide with previous research (e.g. Evans et al., 2000; Evans & Hardy, 2002; Johnson & Carroll, 1998; Niven, 2007) regarding social supports importance to injured athletes rehabilitation and adherence beliefs. Although team sports athlete’s valued social support significantly higher in importance compared to individual sports athletes both types of sport recognised social support as an important source of
confidence. One possible explanation for these findings is that if insufficient social support is available athletes may experience isolation due to withdrawal socially and from the team environment (Wadey & Evans, 2011). This is of importance to team sports athletes because insufficient social support can impose feelings of reduced self-worth and belongingness within the team. Potentially this can lead to reduced self-esteem (Mitchell, 2011; Wadey & Evans, 2011). From a performance perspective these results are consistent with Kingston et al.’s. (2010) findings that individual sports athletes placed more importance on sources such as mastery in comparison to social support. This is potentially because of the nature of individual based sports in which the athletes are more personally exposed (Woodman & Hardy, 2003). These findings highlight the importance to injured athletes especially from a team based environment when trying to reduce reductions in emotions such as self-esteem during rehabilitation.

In comparison to social support the performance related sources possessed little importance to confidence during rehabilitation along with no significant differences between sport-type. These findings contradict findings from previous research (e.g. Vealey et al., 1998; Kingston et al., 2010; Magyar & Duda, 2000). Previous research found performance related sources of confidence to be crucial to future confidence beliefs (Magyar & Duda, 2000). Surprisingly, this was not found within this study’s findings. This suggested demonstrating improvement in the injured limb to others had little importance on athlete’s self-confidence and efficacy beliefs during rehabilitation. In contrast, mastery was ranked 1st within individual sports athletes. This implies individual based sports athletes’ derived confidence more from performing skills correctly than demonstrating quicker recovery than others. For example, testing injured limbs with sport-specific movements to check progress (Evans et al., 2000; Podlog & Eklund, 2007) to achieve specific process goals. These findings highlight the importance of testing the injury limb to individual sports athletes specifically before the return to sport is advisable. Practitioners could assess this through including mastering technical movements with the injured limb related to the sport of the athlete.

Unlike the performance related sources mental and physical preparation as a source of confidence was perceived as important amongst both groups of athletes. No significant differences were found between the two groups and both sport types ranked this particular source of confidence 2nd in importance. These findings are consistent with previous research in both performance and rehabilitation environments (e.g. Evans et al., 2000;
Hays et al., 2007) in which mental and physical preparation is an important source of confidence amongst world class athletes. This may be of particular importance to athletes deriving confidence from a full recovery from the injury and belief in the injured limb's ability to cope with the sporting demands (Evans et al., 2000). Therefore, it can be assumed that successful returnees to sport from injury place particular importance in sufficient physical and mental preparation. The current and previous findings highlight that sufficient mental and physical preparation is important for athlete’s confidence to return to sport successfully from injury.

High importance similar to mental and physical preparation was reported of physiotherapist/coach leadership amongst both types of sport. Subsequently this source was ranked 2nd and 3rd respectively with no significant differences being present. Magyar and Duda’s (2000) similar found injured athletes in rehabilitation are more likely to seek confidence from an informative and informed physiotherapist. This is potentially due to injured athletes reliance on the input of trusted significant others (i.e. coach, physiotherapists). Input from significant others is what the emotional responses to the injury are based upon (Tracey, 2003) and appraisals over the controllability of the injury (Evans et al., 2000). Realistic estimations of recovery time can facilitate better emotional coping because the athlete looks ahead to the return to sport (Tracey, 2003). This reiterates confidence in the coach or physiotherapist prescribing the intervention can facilitate positive beliefs during rehabilitation. Therefore, if progress in rehabilitation is attained in line with goals and coach/physiotherapist estimations adherence is potentially facilitated (Evans & Hardy, 2002).

Surprisingly, in contrast to previous research (e.g. Magyar & Duda, 2000) the two groups of athletes reported low importance of environmental comfort. This particular source of confidence was ranked at 5th and 6th in addition to no significant differences being found between sport types. In comparison to previous research Magyar and Duda (2000) found environmental comfort to be a particularly salient source of confidence when sufficient social support is received during rehabilitation. This lead to the assumption that comfort in the rehabilitation environment can facilitate physical and mental recovery from injury which in turn fosters confidence. However, these results from the current study are consistent with previous performance related studies. Kingston et al. (2010) used a purely elite sample and similarly found environmental comfort to be of little importance. A possible explanation for these findings is that both the current study and Kingston and colleagues study involved highly skilled athletes. Consequently, confidence is assumed to be naturally
higher than the intercollegiate sample within Magyar and Duda’s (2000) sample. The discussed findings suggest the importance of environmental comfort decreases as the athlete’s trait confidence increases. Therefore, skill level of the performer potentially has a direct influence on environmental comfort as a source of confidence.

Physical self-presentation was found to have some importance amongst both team (5th) and individual (4th) sports athletes. No significant differences between sport-types were found however, the results provided some contradictions to previous findings (e.g. Hays et al., 2007; Magyar & Duda, 2000). Previous research has questioned the importance of physical self-presentation as a source of confidence. Initial questioning of this source of confidence initially arose when Magyar & Duda (2000) found physical self-presentation to be of the least importance to athletes going through rehabilitation. One potential explanation for the current study findings is this source can foster confidence using the visual improvement of the injury throughout the rehabilitation (Tracey, 2003) that indicates progression. The results suggest that deriving confidence from the visual aspect of the injury through rehabilitation can potentially be beneficial however this should be used with caution. The unstable nature of this source of confidence can develop unstable perceptions of confidence (Hays et al., 2007; Vealey et al., 1998). Potentially this can lead to emotions such as depression and anger during setbacks.

The least important source of confidence was vicarious experience. This source was ranked 7th (team) and 8th (individual) and reported no significant difference between sport-types. This suggests regardless of sport-type this source of confidence has little effect on the athlete’s confidence beliefs during rehabilitation. These findings contradict earlier research within the sport rehabilitation domain (e.g. Magyar & Duda, 2000). Magyar and Duda (2000) suggested athletes derive confidence through understanding the rehabilitation process. Similarly communicating with athletes with a similar injuries or injury severities can enlighten the athlete on what to expect. Although the current study found contrasting results to Magyar and Duda’s (2000) study from a performance perspective the current findings are consistent. Kingston et al. (2010) found vicarious experience to be the least important sources of confidence amongst individual sports athletes. Although the current results contradicted earlier work by Magyar & Duda (2000) vicarious experience can be utilised by injured athletes to gain an insight into the rehabilitation process. This can potentially positively influence perceptions of ability to cope with the injury. Therefore, practitioners should encourage injured athletes to communicate about the injury to athletes or others who carry a similar injury.
5.4 Practical applications

One main practical implication for practitioners emerged from the results of the current study. The results suggest the most salient source of confidence across both sport-types was mental/physical preparation. This supports previous research that has consistently found this to be a salient source of confidence (e.g. Evans et al., 2000; Hays et al., 2007). Individual sports athletes identified mastery as the most important source of confidence whereas team sports athletes placed more significance on the effect of social support. Again these findings are consistent with previous research (e.g. Magyar & Duda, 2000; Evans et al., 2000). These combined findings possess an important practical implication for applied practitioners. Understanding that the above sources of confidence facilitative effects on confidence based sport-types may result in greater success in rehabilitation success and success in competition post-injury. Therefore, focusing the interventions on sources of confidence that are facilitative to certain sport types is important. For example, during rehabilitation individual sports athletes focus mainly on mastery and coach/physiotherapist leadership sources. Team sport athletes similarly focus on coach/physiotherapist leadership but the intervention incorporates more available social support for the athlete. Correct intervention planning is critical due to focusing on unstable or ineffective sources (e.g. physical self-presentation) can potentially create and ineffective confidence intervention.

5.5 Limitations

Although this study aimed to increase knowledge in how sport type influences confidence levels and sources from which confidence is derived amongst injured athletes several limitations are noticeable throughout the study.

The sample of 21 is substantially less than previous research that has utilised 200 or more participants (e.g. Vealey et al., 1998). This study could be viewed to possess little or no statistical power within this research area. A larger sample could potentially increase reliability, statistical power of results and result in more significant results. and organisational factors (e.g. Wilson et al., 2004; Hays et al., 2007; Kingston et al., 2010). This suggests the results would potentially differ if the sample had been taken from various organisations/populations.
In relation to the data obtained, as eluded to earlier the reliability scores of the subscales mastery and physiotherapist/coach leadership fell below Cronbach’s (1951) accepted alpha score of 0.7. Multiples studies have used the SSCQ or M-SSCQ (e.g. Hays et al., 2007; Kingston et al., 2010; Magyar & Duda, 2000) however; the subscale situational favourableness is the only consistently reported subscale with reliability issues. Possible caution is advised when interpreting the results from the mentioned subscales.

A second limitation associated with the data is that the subscales physical self-presentation, vicarious experience, social support were all significantly skewed towards the higher scores. This suggests a ‘pile-up’ of higher scores violating the assumption of normally distributed data (Field, 2009). Therefore, a potential bias towards athletes with higher trait confidence is present. This is because all but two of the sample competed or competes at a regional level or higher thus preventing any generalization to recreational athletes.

The fact that all types of sport, gender and level of competition were included within the study however; these variables were not taken into account for comparisons. Greater depth and significance of results could have been found if more variables were analysed. This would strengthen the results allowing for a greater contrast with previous research that analysed confidence in relation to these variables separately (e.g. Hays et al., 2007; Kingston et al., 2010).

A similar limitation to the one above is that the injury length was included in the eligibility criteria but no reference to severity was included within the study. The length of injury impacts the magnitude of negative stressors the athlete’s experience. This is due to stressors and emotions change temporally (e.g. Evans et al., 2002; Wadey & Evans, 2011). When injured the longer the rehabilitation the higher likelihood of suffering a setback. These setbacks can have a negative effect on athlete’s confidence. If the mean injury length between sport-type is significantly different this can limit how valid the comparison of these results are.
The final limitation of the study related to the method of data collection. Usage of questionnaires includes issues with memory decay. This limited the response accuracy related to duration of time after injury. The longer the period after injury increases the chance of memory decay affecting the data. Using specified criteria for eligibility (e.g. within 4 months post-injury) would limit issues with memory decay. However, narrowing the eligibility criteria will present challenges with obtaining a larger sample.

5.6 **Strengths**

On top of the noted limitation two key strengths are apparent within the study. The first strength is that study specifically looked at sport type as an independent variable. With most previous research focusing on variables such as gender, age, and skill level scarce research has focused on sport-type. Therefore, this study helped to bridge the gap in understanding in regards to sport-type as a single independent variable influencing self-confidence.

The second key strength is that because sport-type was the variable focused upon within the study this enabled differences between sport types to be compared and contrasted. This was done by analysing initially which sport type possessed greater trait sport-confidence following injury. Secondly by analysing which sources of confidence were utilised more during rehabilitation. This can then be applied specifically to individual’s dependant on sport-type.

5.7 **Areas for future research**

As stated above as a limitation this study only analysed confidence sources following a successful return from injury using sport-type as a variable. As found in previous studies other variables play an important role in athlete’s confidence. Studies including Hays et al. (2007) only investigated confidence amongst the elite performer. Subsequently, this raised the question does confidence sources used differ between the elite and non-elite. Gender has been found to impact athletes’ confidence within studies such as Kingston et al. (2010). Therefore a recommendation for future research is too compare confidence sources used between gender and sport-type, sport-type and competitive level or combining all three. This could establish if any significant differences between athlete
variables and sources of confidence athletes perceive as important to confidence are apparent.

Consistent across research that used the SSCQ is the questioned importance of the construct situational favourableness. Wilson et al. (2004) similarly came across issues with the situational favourableness construct. Therefore Wilson et al. (2004) devised an 8 factor model of the SSCQ. Reliability issues with this subscale resulted in the removal of this subscale. This supported Magyar and Duda’s (2000) similar withdrawal of the situational favourableness subscale. Although Kingston et al. (2010) found some support for situational favourableness as a subscale Wilson et al. (2004) reported situational favourableness as the least important source of confidence. This suggests future research should investigate situational favourableness as a single construct within sport to test for the validity as a source of athlete’s confidence.

The final future research direction is to use a repeated measures design study tracking a larger sample of athletes through the injury process (Injury onset, rehabilitation, and return to sport). Subsequently, this can increase knowledge of if any temporal changes in the sources of confidence during rehabilitation. Secondly, any temporal differences in the sources utilised can be recorded then compared and contrasted to previous literature. Following this the findings can be implemented into rehabilitation programs to facilitate the interventions of injured athletes based on the current phase of rehabilitation.

5.8 Summary and Conclusion

To summarise, the current study aimed to investigate whether any significant differences are apparent between individual and team sports athlete’s trait confidence levels following injury. Following this, the second aim was to explore which sources of confidence as identified by Vealey et al. (1998) were perceived as important between sport-types during rehabilitation. Using the TROSCI developed by Beattie et al. (2011), the present study found no significant differences in trait confidence between team and individual athletes following injury. Although no significant findings were found these findings potential found
evidence for gender having a greater influence on confidence. The second data collection measure was the Magyar & Duda’s (2000) modified version of Vealey et al’s. (1998) SSCQ. Although it has been previously found that stressors differ temporally based on sport-type (Evans et al., 2011) social support was the only source of confidence that reported a significant difference in importance during rehabilitation between team and individual performers. Mastery was viewed as the most important to individual athletes compared to 6th for team athletes however, all sources of confidence except social support reported insignificant differences in importance between both sport-types. Physical and mental preparation was viewed as important to both sports types. In contrast, vicarious experience had little or no importance within either groups of athletes. From an applied perspective these results suggest practitioners require an understanding of which sources of confidence are particularly important to each sport-type. This is critical to plan interventions that facilitate athlete’s confidence based around the competitive sport. For example, implies using support and leadership from significant others is more important in team sport athletes interventions. In comparison, individual sports athletes prefer more control over the tasks set along the guidance from coaches and physiotherapists.

Overall, the current study did narrow the gap in understanding in the sport-confidence. This was done by investigating which sport-type has the higher trait confidence following injury and accounting for the sources of confidence utilised. The findings from the current study have provided the foundations for future research to adopt a repeated measures design to track the sources of confidence perceived as important at different stages of rehabilitation. This can help practitioners adapt intervention strategies throughout the rehabilitation from injury to facilitate a quicker recovery from injury from a psychological aspect.


APPENDICES A
ETHICS STATUS APPENDIX
Date: 10/3/2014

To: Sam Frowen

Project reference number: 13/05/120U

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

O. Thomas

(Supervisor)
Participant information

Purpose of the Study - As part of the requirements for [degree] at Cardiff Metropolitan, I have to carry out a research study. The study is concerned with investigating the difference in self-confidence between individual and team sports athletes/players during a moderate-long term injury. And then to establish the main factors effecting self-confidence of the athletes.

What will the study involve? - The study will involve the completion of 6 questionnaires focused around the area of study. These questionnaires will take no longer than 20 minutes to fill out in total.

Why have you been asked to take part? - You have been asked because you fit the specific guidelines for this research study.

Do you have to take part? – No, participation is completely voluntary and you will be asked to sign a consent form which confirms this. You will have a copy of the information sheet personally and a copy of the consent form if required. At any point before or during this study you have the right to withdraw whether data from your interview has been taken. If required your personal data from your interview can be withdrawn and destroyed within 2 weeks after your data has been taken.

Will your participation in the study be kept confidential? - Yes, your anonymity will be kept throughout this research study. No clues to your identity will be given throughout this research study; although quotes may be used directly in the study no clue to your identity will be given.

What will happen to the information which you give? - Your information will be kept completely confidential throughout the duration of the study. Your information will be retained for a further 6 months after the study and then destroyed.

What will happen to the results? - The results will be presented in the thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the same course or similar courses. The study may be published in a research journal in the future.

What are the possible disadvantages of taking part? – There are no obvious disadvantages of taking part in this research study however; thinking about past emotions/feelings and events may cause distress.
What if there is a problem? At the end of the procedure I will discuss with you your thoughts about the experience and how you are feeling at the present time. If you subsequently feel distressed, you should contact your GP.

Who has reviewed this study? Approval must be given by the ethics committee at the Cardiff Metropolitan University and if required this research study will be sent to a further committee for review before being accepted.

Any further queries? If you need any further information, you can contact me:

Sam Frowen, st20006907@outlook.cardiffmet.ac.uk

If you agree to take part in the study, please sign the consent form overleaf
APPENDICES C
INFORMED CONSENT FORM
Cardiff Metropolitan University

INFORMED CONSENT FORM

**Title of Project:** An analysis into the differencing levels of self-confidence between team and individual sports players/athletes during or post injury and what factors effect self-confidence at these periods.

**Name of Researcher:** Sam Frowen

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 levels of self-confidence during and return to sport from injury.

Name of Participant

________________________________________

Signature of Participant

________________________________________

Date
APPENDICES D
TRAIT ROBUSTNESS OF SPORT CONFIDENCE QUESTIONNAIRE
**Trait Robustness of Sports Confidence Inventory (TROSCI)**

Please read the instructions carefully before responding to the statements.

The statements below describe how you may feel *generally* about your confidence. Respond to each statement by circling the number that corresponds to how strongly you *generally* agree or disagree. Please try to respond to each item separately.

The term *competition* refers to matches, tournaments or other competitive events.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Neutral</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A bad result in competition has a very negative effect on my self confidence</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>My self confidence goes up and down a lot</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Negative feedback from others does not affect my level of self confidence</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If I perform poorly, my confidence is not badly affected</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>My self confidence is stable; it does not vary very much at all</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>My self confidence is not greatly affected by the outcome of competition</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>If I make a mistake it has a large detrimental effect on my self confidence</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>My self confidence remains stable regardless of fluctuations in fitness level</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>
APPENDICES E
MODIFIED VERSION OF THE 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...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all</th>
<th>Sometimes</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Getting positive feedback from my teammates and/or friends</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Completing rehabilitation exercises faster than others</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Keeping my focus on the task</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Psyching myself up</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mastering a new skill in rehabilitation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Getting breaks from my physiotherapist</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Performing in a rehabilitation environment that I like and in</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>which I feel comfortable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Feeling good about my weight.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Believing in my physiotherapist’s abilities</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Knowing I have support from others that are important to me</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Demonstrating that I am better than others</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Seeing successful rehabilitation performances by other athletes</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Knowing that I am mentally prepared for the situation.</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Following certain rituals (e.g. wearing a lucky shirt,</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>eating certain foods etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Score Options</td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Improving my performance on a skill in rehabilitation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Seeing the breaks are going my way</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Feeling that I look good</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Knowing my physiotherapist will make good decisions</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Being told that others believe in me and my abilities</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Showing my ability by doing my best in rehabilitation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Watching another athlete I admire perform a rehabilitation skill</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Staying focused on my goals</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Improving my rehabilitation skills</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Feeling comfortable in the rehabilitation environment in which I am performing</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Feeling that everything is “going right” for me in that situation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Feeling as though my body looks good</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Knowing my coach is a good leader</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row</td>
<td>Description</td>
<td>Not at all</td>
<td>Sometimes</td>
<td>Always</td>
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<td>-----</td>
<td>-------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>28</td>
<td>Being encouraged by physiotherapist and/or family</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Knowing I can outperform others on rehabilitation exercises</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Watching a teammate successfully perform rehabilitation exercises</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
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</tr>
<tr>
<td>31</td>
<td>Preparing myself physically and mentally for a situation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<tr>
<td>32</td>
<td>Increasing the number of rehabilitation skills I can perform</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Liking the environment where I am performing</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Having trust in my physiotherapist’s decisions</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Getting positive feedback from physiotherapist and/or family</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Proving I am better than others in rehabilitation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Seeing a friend perform rehabilitation successfully</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Believing in my ability to give maximum effort to complete my rehabilitation program</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Receiving support and encouragement from others</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Showing I am one of the best in rehabilitation</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Watching my teammates who are at my level perform well</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Developing new skills and improving</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Feeling my physiotherapist provides effective leadership</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>