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SPORT PSYCHOLOGY

UNIVERSITY OF WALES INSTITUTE, CARDIFF (UWIC)
THE PERCEIVED BENEFITS OF SPORT INJURY AND THE UNDERLYING MECHANISMS THAT ENABLE ATHLETES TO ELICIT SUCH BENEFITS
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Acknowledgements

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Abstract

This study aimed to examine the perceived positive impact sports injury can have on athletes. Specifically, the study examined the perceived long-term benefits of sports injury and the underlying mechanisms that enabled athletes to elicit such benefits. Semi-structured interviews were conducted with 10 male team athletes (aged 21.7± 1.8 years) of varying levels of participation ranging from club level to national level. All athletes had experienced a severe injury whilst training or during competition. Interview transcripts were analysed using content analysis procedures. Findings revealed that relative to the perceived benefits of injury, 80 raw data themes emerged generating three general dimensions: (a) Personal Benefits (e.g. clarified priorities), (b) Psychological Benefits (e.g. became mentally tougher), and (c) Physical/Technical Benefits (e.g. technically better). Several perceived underlying mechanisms emerged to suggest how athletes were able to elicit the reported benefits, which included: (a) use of reflective practice and (b) social support. Findings suggest that in order for athletes to gain benefits from their injury experience they must actively engage in the rehabilitation process (e.g., by use of reflective practice) and receive necessary support from those within their social network. Future research is required to enhance knowledge and understanding of the perceived underlying mechanisms that enable athletes to benefit from sports injury.
CHAPTER I – INTRODUCTION
“The injury made me a lot more mature. I have a better grasp of reality in life. I'm more patient and giving...I'm so much stronger emotionally. I've proven to myself I can overcome the most dreaded injury in football.” Lieber (1991, p.44)

This quote from a competitive footballer illustrates that athletes can grow in significant and positive ways from their experiences of injury, which is consistent with a several studies (Ievleva and Orlick, 1991; Rose and Jevne, 1993; Udry et al., 1997; Bianco et al., 1999; Tracey, 2003; Podlog and Eklund, 2006). In spite of these empirical findings, a review of the literature relating to the psychology of sport injury indicates that the majority of research has documented the negative impact injuries can have upon athletes (Evans et al., 2006). Early research that examined injured athletes’ emotional responses to sports injury suggested that they experience a range of negative emotions including tension, depression, frustration and anxiety (Udry et al., 1997; Johnston and Carroll, 1998; Bianco et al., 1999; Granito, 2001). Some injured athletes experience minimal postinjury mood disturbance, while others experience more serious and lasting depression (Smith et al., 1990). Higher levels of mood disturbance are thought to be most profound in the more seriously injured athletes. Some research has gone as far to show that adverse major life events such as injury can even lead athletes to have suicidal tendencies (Smith and Milliner, 1994). Consequently, researchers and practitioners have directed their efforts to facilitating athletes’ physical and psychological recovery from sport injury. Strategies to minimise adverse psychological responses to injury and enhance recovery have been widely identified within the research literature. For example, there is evidence to support the benefits of using goal-setting to enhance self-efficacy, motivation, rehabilitation adherence and rehabilitation outcome (Evans and Hardy, 2002 Theodorakis et al., 1996, 1997; Evans and Hardy, 2002). There is also evidence for the positive effects of social support on rehabilitation adherence (Byerly et al., 1994; Evans et al., 2000; Evans and Hardy, 2002).
Certain researchers have extended this line of inquiry by showing that athletes can not only return to their preinjury physical and psychological state, but can also derive important long term benefits along the way. Such benefits include renewed perspectives, enhanced psychological attributes and improved technical skills (Ievleva and Orlick, 1991; Rose and Jevne, 1993; Bianco and Orlick, 1999; Tracey, 2003; Podlog and Eklund, 2006). These empirical findings suggest the existing body of literature relative to the psychology of sport injury may provide a limited view of the overall injury experience. Researchers’ interest in the perceived benefits of injury mainly emanated from Udry et al. (1997) whom found that 95% of skiing athletes involved in a season-ending injury reported one or more benefits associated with their injury, with 81 raw data themes grouped into three general dimensions: (1) personal growth benefits (e.g. clarified priorities), (2) psychologically based performance enhancements (e.g. became mentally tougher), and (3) physical/technical development benefits (e.g. technically better). Several studies provide support for the notion that athletes may derive benefits of positive consequences from an injury experience: however it should be noted that the central aims of these studies was not to examine the potential benefits of injury (Ievleva and Orlick, 1991; Rose and Jevne, 1993; Bianco et al., 1999; Tracey, 2003; Podlog and Eklund, 2006). In addition, Udry et al. (1997) highlighted the need to explore the underlying mechanisms associated with such benefits as one skier was unable to identify any benefits associated with being injured. However, researchers have yet to examine the mechanisms by which athletes are able to elicit benefits from their injury experience. Consequently, and consistent with recommendations for future research (Udry, 1999), these observations provided a rationale for this study.

Specifically, this study aims to be the first to not only exclusively examine the perceived long-term benefits of sports injury, but also to examine the underlying mechanisms that enable athletes to elicit such benefits. This study aims to highlight and further reinforce the concept that injury can be a positive experience, despite the vast amount of literature associated with the negative impact of injuries. The results from this will help to inform athletes, coaches and practitioners working with injured athletes to not only expedite athletes’
physiological and psychological recovery but to also facilitate the process by which athletes may derive positive consequences from their injury experience.

A qualitative approach was deemed necessary for the present study to capture the richness and complexity of individuals’ experiences (Patton, 2002). The study utilised the ideographic approach, which includes in-depth interviews followed by comprehensive content analysis of the interview transcripts. Specifically, semi-structured interviews were conducted with 10 male interactive team sport athletes of varying levels of participation using an interview guide. The central focus of the interviews was the perceived benefits of injury and the underlying mechanisms associated with such benefits. Interviews were transcribed verbatim, followed by content analysis of the interview transcripts. The interview guide provided a deductive framework for analysis of the interview transcripts, and thereafter, assisted inductive analysis by facilitating comparisons across and between participants.
CHAPTER III – METHODOLOGY
Participants

Participants were selected to take part in the study based on purposeful sampling according to specific criteria. The criteria required that participants had sustained a severe injury as a result of training or competing in an interactive team sport. Based on a consensus statement on injury definitions and data collection procedures in studies of rugby union and football injuries, a severe injury was defined as loss from training and competition for > 28 days (Fuller et al., 2006, 2007). The majority of participants were recruited from the University of Wales Institute, Cardiff (UWIC) and one participant was recruited from the University of Glamorgan. A retrospective study was considered to be most appropriate as this allowed participants time to reflect and ascertain possible benefits they have elicited from their rehabilitation experience. Participants therefore ranged from 6-19 months since their return back to competitive sport.

Because of the extensive nature of the interviews and time constraints placed upon the investigation, 10 participants were considered adequate for meeting the objectives of the investigation. It should be noted that this sample number is not a result of reaching saturation in data collection. Moreover, this number of participants is consistent with similar investigations and methodologies (Rose and Jevne, 1993). It has been argued that a large sample group in qualitative research may actually be detrimental as high numbers of participants may reduce the quality of the data collected and create data management problems during the subsequent analysis (Kvale, 1996). Studies with larger numbers have been associated with a heightened chance of analysis error (Biddle et al., 2001).

The mean age of the participants was 21.7 ± 1.8 years and on average they had competed in their chosen team sport for 10.4 years. The participants represented three team sports (i.e., rugby, football and basketball) and ranged from amateur to national levels of performance. Finally 5 of the participants had sustained knee injuries (3 involved cruciate ligament damage, 1 was a fracture and 1 was a dislocation), 4 sustained ankle injuries (2 were fractures,
1 was a snapped ligament and 1 was achilles tendentious) and one sustained a leg injury (specifically, a pulled hamstring). Full details of the participants sporting backgrounds and injury history are presented in Tables 1 and 2 respectively.
Table 1. Participants Sporting Background

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Gender</th>
<th>Sport</th>
<th>Position(s)</th>
<th>Years participating in sport</th>
<th>Current Performance Level</th>
<th>Highest performance level</th>
<th>Date of highest performance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>Male</td>
<td>Rugby</td>
<td>Back row</td>
<td>8</td>
<td>Club</td>
<td>District</td>
<td>2004</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>Male</td>
<td>Rugby</td>
<td>Winger</td>
<td>9</td>
<td>Club</td>
<td>County</td>
<td>2000</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>Male</td>
<td>Rugby</td>
<td>Back row</td>
<td>9</td>
<td>University</td>
<td>Regional</td>
<td>2003-2005</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>Male</td>
<td>Rugby</td>
<td>Winger/Scrum-half/Full-back</td>
<td>12</td>
<td>Club</td>
<td>District</td>
<td>1998/1999</td>
</tr>
<tr>
<td>5</td>
<td>22</td>
<td>Male</td>
<td>Basketball</td>
<td>Guard</td>
<td>6</td>
<td>University (Athlete)</td>
<td>National</td>
<td>2008</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>Male</td>
<td>Football</td>
<td>Midfield</td>
<td>12</td>
<td>Club</td>
<td>County</td>
<td>2002</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>Male</td>
<td>Rugby</td>
<td>Prop</td>
<td>14</td>
<td>University</td>
<td>National 1</td>
<td>2006</td>
</tr>
<tr>
<td>8</td>
<td>25</td>
<td>Male</td>
<td>Football</td>
<td>Defender</td>
<td>18</td>
<td>Semi-pro Conference</td>
<td>Semi-pro Conference</td>
<td>Current</td>
</tr>
<tr>
<td>9</td>
<td>21</td>
<td>Male</td>
<td>Rugby</td>
<td>Front Row</td>
<td>10</td>
<td>University</td>
<td>National</td>
<td>2005</td>
</tr>
<tr>
<td>10</td>
<td>21</td>
<td>Male</td>
<td>Basketball</td>
<td>Power Forward</td>
<td>6</td>
<td>English National League Division 1</td>
<td>English National League Division 1</td>
<td>Current</td>
</tr>
<tr>
<td>Participant</td>
<td>Type and location of Injury</td>
<td>Previous injuries</td>
<td>Date of Injury</td>
<td>Date of Return to Competition (Fully Recovered)</td>
<td>Rehabilitation Period</td>
<td>Interview Date</td>
<td>Reflection Period</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
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<td>----------------------------------------------------------------------------------</td>
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<td>----------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Fractured Patella</td>
<td>Dislocated and fractured metacarpals and metatarsals, chipped vertebrae and concussion</td>
<td>May-06</td>
<td>Apr-07</td>
<td>11 months</td>
<td>01/11/2008</td>
<td>19 months</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Partial tear of MCL and PCL</td>
<td>Partial tear of supraspinatus</td>
<td>Sep-07</td>
<td>Jun-08</td>
<td>10 months</td>
<td>22/11/2008</td>
<td>6 months</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Torn PCL</td>
<td>Fractured metacarpal</td>
<td>Oct-07</td>
<td>Mar-08</td>
<td>6 months</td>
<td>01/12/2008</td>
<td>10 months</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fractured Ankle</td>
<td>Fractured metacarpals</td>
<td>Jul-07</td>
<td>Jan-08</td>
<td>7 months</td>
<td>06/12/2008</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Snapped Ankle Ligament</td>
<td>None</td>
<td>Oct-05</td>
<td>Jan-08</td>
<td>27 months</td>
<td>09/12/2008</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Fractured Ankle</td>
<td>Fractured metatarsals and metacarpals, dislocated knee, concussion and broken nose.</td>
<td>Jul-07</td>
<td>Oct-07</td>
<td>4 months</td>
<td>15/12/2008</td>
<td>15 months</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Hamstring Pull</td>
<td>None</td>
<td>Jun-07</td>
<td>Sep-07</td>
<td>4 months</td>
<td>12/01/2009</td>
<td>15 months</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Dislocated Knee</td>
<td>Fractured cheekbone, broken jaw</td>
<td>Dec-06</td>
<td>Nov-07</td>
<td>11 months</td>
<td>12/01/2009</td>
<td>14 months</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Ruptured ACL</td>
<td>Ruptured ACL</td>
<td>Sep-07</td>
<td>Sep-08</td>
<td>12 months</td>
<td>29/01/2009</td>
<td>6 months</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Achilles Tendentious</td>
<td>Ischemia in upper back, fractured right heal, Osgood Schlatters (Both Knees), fractured left wrist, broken nose, fractured metacarpals, fractured right metatarsal</td>
<td>Sep-07</td>
<td>Nov-07</td>
<td>2 months</td>
<td>02/02/2009</td>
<td>15 months</td>
<td></td>
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</table>
Interview Guide

A semi-structured interview guide (see APPENDIX A) was developed for the purposes of this study. Semi-structured interviews include a standard set of questions but also offer some flexibility in the interview approach (Patton, 2002). This enables the interviewer to probe for more in-depth or required information relevant to research objectives and also offers the interviewer the opportunity to control the direction of the interview, compensating for any bias through interviewer dominance (Patton, 2002). Too much rigidity in the interview process could reduce the chances of an interview successfully capturing the athlete experience (Dale, 1996). Semi-structured interviews allow the emergence of important themes that may not emerge from more structured format interviews (Gratton and Jones, 2004). Moreover, the research was exploratory as a paucity of research has focused on the possible benefits associated with injury, thus interviews were used to identify information that could be used to refine and develop further investigation (Gratton and Jones, 2004).

The interview guide was designed specifically for the study based on (a) an extensive review of the psychology based injury literature relevant to the perceived benefits associated with injury (e.g., Brewer, 2001; Evans et al, 2006) and (b) existing methodological sources that discuss the use of interviews for qualitative investigations (Patton, 2002). The interview guide consisted of the following sections: (a) sporting involvement, (b) injury onset, rehabilitation and return, (c) perceived benefits, (d) summary, and (e) conclusion. Examples of questions from section (c), the main focus of the interview include: “What would you say were the benefits or positive consequences as a result of being injured?” and “How were you able to elicit these benefits?”

Once developed, an experienced qualitative researcher scrutinized the guide with regard to content and structure (Patton, 2002). This evaluative process resulted in minor refinements being made to question narrative and phasing. Subsequently, to ensure the questions were appropriate and tapping into the correct areas of interest a pilot interview was conducted with a male interactive team athlete that met the initial criteria for the investigation. This allowed the interviewer to become familiar with the questions and more confident with the general interviewing process, giving them the
opportunity to practice and refine their interview skills and techniques before
commencing the main investigation (Patton 2002). The pilot interview was listened to
by an experienced qualitative researcher and recommendations were provided.
Feedback was also obtained from the interviewee. Based on feedback further
amendments were made to the interview guide.

**Procedures**

Once the participant had provided written informed consent (see APPENDIX B) and
agreed to take part in the study, a convenient time and location was identified to
conduct the interview. In line with recent qualitative studies (e.g., Connaughton et al.,
2008), each participant was sent a copy of the interview guide prior to their interview
in order to familiarise themselves with the types of questions that would be asked. All
interviews were conducted face-to-face in a neutral environment (i.e., at the author’s
or participants home). It was stressed that participation was voluntary and that all
data would be kept strictly confidential. Prior to the interview the participant was
informed of the purpose of the study, that is, to identify the perceived benefits of
injury and further establish how athletes were able to elicit these benefits. The main
questions were preceded by an introductory section and elicited background
demographic information. The introductory section provided an overview of the
interview and made clear to participants that they could refuse to answer any
questions and that they could terminate the interview at any time.

The interview was structured to promote a rapport between the interviewer and the
participant. Specifically, greetings and background questions, which would typically
be considered relatively easy for participants to respond to were asked initially,
before moving on to the more difficult and sensitive questions (Patton, 2002). These
questions were not directly related to the research but were considered important at
this stage to gain the cooperation and trust of the interviewee (Gratton and Jones,
2004). Clarification and elaboration probes were used throughout each interview to
ensure consistent depth of questioning across interviews. Examples of these include,
“Would you elaborate on that?” and “Could you give me an example?”
The predetermined probes were an attempt to minimise bias in the interview by
ensuring that all follow-up questions were asked in a similar manner to each
participant.
At the end of each interview, athletes had the opportunity to add anything they thought was important that was not covered in the interview. The length of the interviews ranged from 35-60 minutes. All interviews were tape-recorded and conducted by the same individual. Before the beginning of the project the interviewer received methodological guidance from an experienced qualitative researcher. All interviews were transcribed verbatim which resulted in 134 single-spaced pages of text.

Data analysis

The study utilised the ideographic approach, which includes in-depth interviews followed by comprehensive content analysis of the interview transcripts. Data analysis involved both a deductive and inductive process. The interview guide provided a deductive framework for analysis of the interview transcripts, and thereafter, assisted inductive analysis by facilitating comparisons across and between participants.

Data analysis involved four main phases. First, to become thoroughly familiar with each interview the investigator listened to the audiotape of the interview. Following this, the investigator read and re-read the interview transcript. Second, data was organised via tagging. Tagging involves dividing the text of each interview transcript into text segments called raw data themes (Cote et al., 1993). Tesch (1990) defined a raw data theme as a “segment of text that is comprehensible by itself and contains one idea, episode or piece of information” (p.116). Creating tags separates relevant portions of data from their context, or “de-contextualises” the information (Tesch, 1990). Creating tags was done manually by using different colours to identify them. Thirdly, higher and lower order themes were created by listing and comparing the tags derived in the second phase. Tags with similar meanings were gathered together, and a label that captured the substance of the topic was created to identify the cluster of tags (Miles and Huberman, 1994). The purpose of creating tags is, therefore, to “re-contextualise” the information into distinct themes (Tesch, 1990). The process of recontextualising each raw data theme into the organising system was done by cutting and pasting each raw data theme into different piles
representing higher and lower order themes. In summary, tagging was used to reduce the large amount of data and to rearrange the text into manageable and organised units. Finally, this was followed by inductive interference to create higher and lower order themes. Higher and lower order themes were modified and refined until a satisfactory system was agreed upon through investigator triangulation. When new themes did no longer emerge, saturation was though to have occurred and the process of analysis reached a conclusion (Biddle et al., 2001).

**Trustworthiness**

Several methods were used to enhance the trustworthiness of the data and to meet a number of the criteria proposed by Lincoln and Guba (1985). Specifically, investigator triangulation was used at each stage of the study (design, implementation and data analysis) in an attempt to avoid the potential bias that can arise from a single researcher operating in isolation (Lincoln and Guba, 1985; Patton, 2002). All data was embraced, that is, all responses were considered even if they were only identified by one participant. This is known as a negative case analysis (Lincoln and Guba, 1985). The issues of transferability and credibility were addressed by providing detailed quotes derived from the interview transcripts. Dependability, which can be seen as the studies reliability was achieved by describing all methodological and data analysis procedures in depth. It must be noted that “while one would strive to achieve all the trustworthiness criteria, it will be seldom possible to do so.” Hardy et al., (1996, p.266)
CHAPTER V - CONCLUSION
This study was designed to examine two main objectives. Firstly, it was explored whether athletes may grow from an adverse injury experience. The findings of the study clearly show that over the long term athletes felt they grew and developed from their injury experience in positive ways. These specific perceived benefits were categorised into three general dimensions: (a) Personal Benefits, (b) Psychological Benefits, and (c) Physical/Technical Benefits. Not only are these findings important in highlighting the notion that injury can be a potentially positive experience, but they also have theoretical implications for research related to the psychological responses to injury. Specifically, although the core of Wiese-Bjornstal et al.’s (1998) integrated model of psychological response has the ability to tap into the perceived benefits of injury, it only addresses physical and psychological recovery outcomes. Indeed, the findings of this study along with previous investigations (e.g. Udry et al., 1997) show that there are other potential beneficial recovery outcomes, that is, technical benefits. The integrated model therefore needs to be extended to include a broader range of overall outcomes. That is, it’s not only recovering physically and mentally to preinjury levels, but also developing other perceived benefits during the recovery process.

Secondly, it was explored how athletes were able to elicit benefits from their injury experience, that is, the skills and strategies they use to obtain such benefits. Results suggest that the two principle underlying mechanisms that enabled athletes to benefit from their injury experience is (a) the individual athlete engaging in reflective practice and (b) effective social support, although, there is evidence to suggest that other skills and strategies may be effective in allowing athletes to benefit from injury, for example, the use of imagery or remaining involved in the team environment. However, it should be noted that this is the only study to directly investigate the underlying mechanisms associated with the benefits of injury. In order to fully understand how athletes may derive benefits or positive consequences from their injury experience further research is required.

Lastly, it should be noted that although the findings of this study forward the notion that athletes may benefit from an injury experience, this proposal is not meant to minimise the potentially negative impact of injuries.
Practical Implications

Udry (1999) noted it would be naïve and unrealistic to simply assume that athletes will universally and effortlessly experience numerous benefits from their injuries. The results indicate that it may be possible to facilitate the process by which athletes derive positive consequences from their injury. It is in this light that the following practical recommendations are forwarded.

Primarily, injured athletes must not passively assume positive consequences, rather they must actively engage during injury rehabilitation. For example, in this study one athlete noted that they were able to develop their relationship with their coach by, “making the effort just to talk.” This notion is reinforced by the language used by injured athletes in both this investigation and Udry et al.’s (1997) original study relative to the benefits of injury. Specifically, athletes used terms such as “learned” or “recognised” to describe how they felt they grew from their injuries. These types of descriptions suggest that athletes were actively engaged in the recovery process. As Thoits (1995) has noted, when trying to understand how individuals respond to adversity we should not ignore the fact that individuals often act on their own behalf.

Secondly, the results clearly indicate that reflective practice during and after injury rehabilitation can have a major impact on the professional and personal development of athletes. As one athlete highlighted, “It’s all about, within injury I find reflection. Because you get a lot of time on your hands you tend to self-reflect a lot and learn about yourself.” Injury provides athletes with the space and time to retrospectively examine performance in detail. The links between self-awareness, reflection and personal growth suggests that the process of reflection can elicit challenging thoughts and emotions. At times reflection may lead to feelings of discomfort or vulnerability, but if athletes are committed to rehabilitation, then challenging thoughts and emotions should ultimately enable them to learn from their experiences (Anderson et al., 2004). By increasing self-awareness athletes will be in a better position to manage themselves and their rehabilitation during recovery effectively (Poczwardowski et al., 1998). In order for future injured athletes to gain the most from their injury experience it is also important to consider the application of reflective practice within sport psychology practice. There is significant potential to develop
reflective practice through education of sports psychologists. Other sports practitioners such as coaches should also be educated alongside athletes themselves. Sachs (1999) highlighted the need for more information on how to implement reflective practice programs. Anderson et al., (2004) further emphasised the need to provide guidance on the practicalities of reflective practice (the what, when, why and how). The practicalities of engaging in reflective practice are flexible. For example, reflection can be spontaneous or planned, undertaken as a personal or public activity, and typically involve conversational or written reflections in addition to cognitive reflections. As mentioned previously, one athlete was able to develop his emotional intelligence through written reflections. In addition it was noted that another athlete was able to grow emotionally and intellectually through talking to others during their injury experience, an example of conversational reflections. There is also evidence to suggest that in addition to reflective practice, the use of imagery may enable athletes to elicit benefits from their injury experience.

Finally, the results of the study provide sufficient evidence for effective social support as an underlying mechanism that allowed athletes to derive benefits from their injury experience. Several studies within the sport injury literature (e.g., Udry, 1996, 1997; Johnston and Carroll, 1998, 2000; Bianco, 2001) have showed that social support plays an important role in the way an athlete rehabilitates from sport injury. There are three main types of social support: emotional support (includes listening support, emotional comfort and emotional challenge), informational support (includes reality confirmation, task appreciation and task challenge), and tangible support (includes material and personal assistance). Cutrona and Russell’s (1990) matching hypothesis theory posits that specific support activities should match stressor characteristics. Research indicates that generally, injured athletes will turn to close friends and family for emotional support, and people with relevant expertise for informational support (Johnston and Carroll, 1998). It is also vital to consider athlete’s perceptions of social support available to them (Evans et al., 2006). For example, one athlete stated,

“I didn’t perceive my girlfriend at the time close enough to be able to talk to about it because she lacked that association with football…I didn’t really take her word very serious, especially football-related matters.”
Furthermore, this quote supports Lin’s (1986) social resources theory which suggests that relationship closeness is a consideration in the provision of social support.

In addition to the practical implications that emerged from the results, athletes were asked to suggest practical recommendations for athletes recovering from a similar injury to theirs that would allow such athletes to benefit as they did. One athlete suggested informational support as significant in allowing future athletes to benefit from their injury experience as they did. The athlete stated, “Seek good advice and get as much information from your consultant and your physiotherapist as possible.” Finally, another athlete stressed the importance of keeping socially involved within the sporting environment. The athlete stated:

“I would also recommend being around the team atmosphere as much as possible because it will stop you feeling socially isolated and can help keep you motivated to return.”

**Strengths and Limitations**

As with any investigation, the design of this investigation had a number of strengths and weaknesses that must be considered when interpreting the findings. While a retrospective design has the advantage of allowing athletes to reflect on their injury it is clear that the effect of memory bias may have a significant effect on the results and therefore the trustworthiness of the investigation. There is also evidence to suggest that attributions for events change over time (Miller and Porter, 1980; Brewer et al., 1991; Evans and Hardy, 1995). It is important to acknowledge that it may not be possible for injured athletes to immediately derive any positive consequences from their injuries. The work of Udry et al. (1997) was based on interviews with athletes who were interviewed, on average, 2.7 years after experiencing their injury. It is not yet known at what stage in the recovery process that athletes are likely to be able to perceive that they derived any long-term benefits from their injuries.
Although all participants involved in the study are team sport athletes likely to compete at a relatively high level of performance, the small sample number (as a result of the extensive nature of interviews) and possibility of obtaining a range of athletes who compete at varying levels of performance, means that the results of the investigation may not be truly reflective of a specific sporting population.

A further limitation was the inexperience of the interviewer. The interviewer was not highly proficient in the interview technique and it can only be assumed that this emerges with time and continued practice. The researcher is a key element of the interview process, and his or her skills, attributes and interviewing technique are all and integral part of the success of this method in obtaining ‘rich’, qualitative data. The quality of the data is often dependent on the skill of the interviewer (Gratton and Jones, 2004).

The personality characteristics of the athletes themselves also proved to be a limitation. Some athletes responded well to the questions put to them. Other athletes were not familiar with being asked to talk freely about their injury experience and, even when probed struggled to articulate themselves, despite being provided with the interview guide prior to their interview.

Nevertheless, the strength of this study is the fact that it is the only study to directly investigate the perceived benefits of sports injury and further examine how athletes were able to elicit such benefits, that is, the skills and strategies that they use. The nature and results of the study highlight and reinforce the concept that sports injury can be a positive learning experience in spite of the vast amount of literature concerned with the negative aspects of sports injury. It is hoped that the results of the study will urge sport psychologists to further investigate the positive aspects associated with sports injury to potentially launch a new and innovative branch of research within the field of sport psychology.
Directions for future research

Research into the perceived benefits of sports injury is extremely scarce leaving vast scope for development. As with this study, future research may wish to investigate the underlying mechanisms that enable elicit benefits from their injury experience. Increased knowledge and awareness of the underlying mechanisms would aid the development of relevant interventions to facilitate the process by which athletes derive positive consequences from their injury experience. However, as stated previously, it is not yet known at what stage in the recovery process that athletes are likely to be able to perceive that they derived any long-term benefits from their injuries. Thus, future research should perhaps interview athletes at different periods after they have reached full recovery to establish whether the nature and extent of perceived benefits varies between different reflection periods. Additionally, future research may wish to focus solely on a particular type of benefit that has emerged from the literature up until now (i.e. Personal Benefits, Psychological Benefits, or Physical/Technical Benefits). This study has been conducted using only male team sport athletes at both the elite and non-elite levels of participation. Future studies relative the benefits of injury may wish to examine gender differences, differences between individual and team sport athletes and differences between participation levels.

Furthermore, as within this study, the combined protocol of semi-structured interview and content analysis remains the primary framework for the undertaking and reporting of qualitative inquiry in sport and exercise psychology (Cote and Salmela, 1994; Hayashi, 1996; Bloom et al., 1998; Meyer and Wenger, 1998). Biddle et al., (2001) highlighted the wide range of approaches available to those researching sport and exercise psychology (e.g. case studies, ethnography, respective observations, reflective group work) and suggested that such methodological diversity should help rather than hinder research in this field. Future research may wish to adopt a different approach to the dominant interlinked protocol of semi-structured interview and content analysis. It would be feasible to develop a questionnaire in order to generalise the current findings relative to the perceived benefits of injury.
REFERENCES


APPENDICES
APPENDIX A
INTERVIEW GUIDE

SPORT INJURY: PERCEIVED BENEFITS OF INJURY

Participant details:

Name: 
Age: 
Gender: 
Type, location and severity of injury: 
Sport: 
Event(s)/position(s): 
Years participating in sport: 
Current performance level: 
Highest performance level: 
Date of highest performance level: 
Previous injuries: 

Interview date: 
Time begun: 
Time ended: 
Duration of interview:
First, and foremost, thank you for agreeing to take part in this study. My name is Kieran Evans and I am an undergraduate student from the University of Wales Institute, Cardiff (UWIC). The aim of this interview is to discuss any benefits you may have experienced from being injured and, if so, how you were able to elicit these benefits. While injury is undoubtedly a negative experience for most athletes, this research question came about from a number of studies that demonstrated that athletes often experience a number of benefits during their recovery. I am interested in discussing with you the benefits you may have experienced from being injured and, if so, how were able to elicit these benefits. Please do not be concerned if this is somewhat confusing at present. The questions in this interview will help you to recall this information. The information you provide during this interview will be used in my dissertation and may also be published in scientific journals so that other athletes, coaches, and sporting personnel can benefit from your experiences. All your responses will remain anonymous and any information you provide will be stored in a secured area that is only accessible to me and my supervisory team. To ensure a complete and accurate account of this interview, I will be using a tape recorder.

Before starting the interview I would also like to confirm your rights as a participant. This interview is about your experiences and as such if you feel uncomfortable answering any of the questions then you are free to decline to comment or ask for the interview to be stopped. I would rather you declined to comment than answer in a way that you think I or someone else would want you to. Please take your time when responding to questions during the interview, pauses are fine. However, if you still can not recall, please let me know and do not guess. There are no right or wrong answers to any of the questions. If you have any questions yourself please feel free to ask them at any point, especially if I ask something that is not clear. Finally, please remember that I am interested in gaining an overall
understanding of your injury experience; therefore, please do not hesitate to include anything that you believe had an impact on you during this time, such as family issues, relationships, examinations and so forth. Okay, before we make a start do you have any questions?

SECTION TWO: SPORTING INVOLVEMENT

Record from this point onwards

Okay, prior to exploring the circumstances surrounding your injury, in the first section of this interview I am interested in setting the scene by gaining an understanding of your involvement in sport and what role injury has played in your competitive career.

1. Okay, how long would you say you have been involved in competitive sport?
   Probe: Who got you involved in competitive sport?
   Probe: It seems that early on in your career you played many different sports?
   Probe: Can you tell me more about how you came to focus on your current sport?

2. Who do you currently compete for?
   Probe: How long have you competed for them?
   Probe: What is the highest level you have competed at in any sport?

3. What role has injury played in your sporting career so far?
   Probe: What (if any) effect has this had upon you?
   Probe: Do you have any strategies you use to prevent injury?
   (e.g., healthy life-style practices, such as adequate rest, nutrition and/or conditioning)
SECTION THREE: INJURY ONSET/REHAB/RETURN

This section of the interview is concerned with your overall injury experience and is divided into three main parts (1) the onset of your injury, (2) your rehabilitation, and (3) your subsequent return back into competitive sport. Please remember, this interview is not intended as a test to catch you out in any way. There are no right or wrong answers to any of the questions. I am only interested in learning from your experiences. If you have any questions yourself please feel free to ask them at any point, especially if I ask something that is not clear. If you can’t remember, just let me know and we can move on.

Need to work out time scale for each phase:

Date of injury:
Date of initial physiotherapy appointment:
Date of return to competitive sport (i.e., full training or competition):

Phase 1:

1. Okay, can you firstly tell me what happened when you become injured?
   Probe: Type, location, and severity of your injury?
   Probe: What were you not able to do as a result of your injury in this phase?
   Probe: What were you able to do that you couldn’t do prior to your injury in this phase?
   (e.g., more free time to focus on other interesting and worthwhile tasks)

Phase 2:

2. Talk me through the start of your rehabilitation?
   Probe: How did your rehabilitation programme change over time?
   Probe: What factors do you think negatively influenced your rehabilitation progress?
Probe: What factors do you think positively influenced your rehabilitation progress?

Probe: What individuals were most helpful/unhelpful during this phase?

Probe: How did your rehabilitation change prior to your re-entry into competitive sport? Why?

**Phase 3:**

3. **Can you describe your transition from your rehabilitation to your return to sport?**

Probe: How was it decided when you would return to competitive sport?

Probe: Was this the originally targeted time-scale?

Probe: What did you find difficult about re-entering sport? Why?

Probe: What factors helped your re-entry into competitive sport?

**SECTION FOUR: PERCEIVED BENEFITS**

This final section of the interview is concerned with the benefits you may have gained as a result of your overall injury experience. Please remember that I am interested in gaining an overall understanding of your injury experience; therefore, please do not hesitate to include any benefits inside or outside of sport.

1. **Ok, firstly, having had sufficient time to reflect on your overall injury experience what would you say were the benefits or positive consequences as a result of being injured? Tell me more about these?**

Probe: Do you feel you gained any new insights?

   a. About yourself?

   b. About others?

Probe: Were any personal relationships strengthened or weakened?

Probe: What have you learned from your injury experience?

Probe: How were you able to elicit these benefits?
2. In addition to the benefits / positive consequences you've just mentioned and to ensure you have identified all the different types of benefits that you experienced, I have identified a number of types of benefits which I would like you to consider - are there any additional benefits here that you experienced? Only go through those that haven't already been identified.

   a. *Personal benefits* e.g. gained perspective, personality development, developed aspects of non-sporting life, better time management.
      Probe: How were you able to gain these benefits?

   b. *Psychological benefits* e.g. increased efficacy/toughness, enhanced motivation, and realistic expectations.
      Probe: How were you able to gain these benefits?

   c. *Physical benefits* e.g. physical health, strength or other key components of fitness
      Probe: How were you able to gain these benefits?

   d. *Technical benefits* e.g. awareness improvements
      Probe: How were you able to gain these benefits?

   e. *Other* e.g. communication skills
      Probe: How were you able to gain these benefits?

5. Were there any other factors that you feel affected the way that you benefited during this phase?
   Probe: What were these?
   Probe: Why do you feel they had this effect?
SECTION FIVE: SUMMARY

1. Reflecting back on your overall injury experience how beneficial have you found it? E.g. would you say your injury overall was a negative or positive experience?
   Probe: Why do you feel it was a negative/positive experience?

2. Reflecting back over this period is there anything else you feel you could have done or done differently to benefit more effectively?
   Probe: What specifically do you think you could have done?
   Probe: How and why do you think it would have helped?

3. What do you feel is the most significant benefit, why?

4. If you had to make practical recommendations for athletes recovering from a similar injury to yours that would allow them to fully benefit from their experience, what would you suggest?

SECTION SIX: CONCLUSION

1. How do you think the interview went?
2. Do you feel able to tell all that you wanted to?
3. Do you feel we missed any important areas you would like to discuss/add to?
4. Have you any comments or suggestions about the interview itself?

Thank-you
Elaboration Probes

Would you elaborate on that?

Could you say some more about that?

That’s helpful. I’d appreciate a bit more detail.

I’m beginning to get the picture.

Clarification Probes

You said…What do you mean by …?

Could you give me an example during your recovery?

I’m not sure I understand what you meant by that. Would you elaborate please?

I want to make sure I understand what you saying. I think it would help me if you could say some more about that.
APPENDIX B
**Informed Consent Form**

<table>
<thead>
<tr>
<th>Subject:</th>
<th>Name</th>
<th>Sex: M / F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth</td>
<td></td>
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</tbody>
</table>

**Investigators:**
- Kieran Evans (Student)
- Lynne Evans (Member of Staff)

**Ethical Approval Gained?** Yes / No

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**Title of the Study:**
The perceived long-term benefits of sport injury and how athletes elicit these benefits.

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**Objective and Procedures to be Employed**
Before you read and consider the information presented below it is important that you are aware that all of the proposed testing procedures have been examined by an ethics committee, which has accepted that the proposed study is suitable for use with consenting, human subjects.

**Objectives**
The major aims of the present study are:
1) Identify the perceived long-term benefits of sport injury rehabilitation.
2) Further identify how athletes elicit these benefits (i.e. what skills and strategies do they possess and use to obtain such benefits).

**Interviews**
You will be interviewed on one occasion in at a time and location that is convenient for you. The interview will be approximately 1 hour in duration.

**Potential Risks**
None

**Benefits**
In becoming involved in this study you will enable us to collect data which forms part of a long-term research programme. The findings will provide us with a better
understanding of the skills and strategies that help athletes benefit optimally from their injury experiences.

**The Data**
All data collected during the testing will remain anonymous and will be treated with the strictest confidence, although it could form the basis of eventual scientific publications and/or presentations.

NB - The University and its staff accept no liability for any matters arising, either directly or indirectly, from the information and recommendations given to you as a result of the outcomes of your test. It is the responsibility of the athlete to ensure that the Sport Scientist is aware of any medical conditions or other information that might affect either the test itself or the interpretation of the results and subsequent recommendations.
Statement by the Subject

I have been made fully aware of the risks and benefits involved from partaking in the present study. I understand that I am free to withdraw from the study at any time and that the results of the study will be treated anonymously and with total confidentiality.

I have had my attention drawn to the document produced by the American College of Sports Medicine (1997) entitled “Policy Statement Regarding the use of Human Subjects and Informed Consent”. It has been made clear to me that if I feel my rights are being infringed and / or my interests are being ignored, neglected or denied, I should inform the chairman of the Cardiff School of Sport Research Ethics Committee who will undertake to investigate my complaint.

Signed: ______________________  Date: __________________
(Subject’s signature)

I certify that the details of the study have been fully explained and described in writing to ______________________, and this information has been fully understood by him.
(Subject’s name, printed)

Signed: ______________________  Date: __________________
(Independent witness’ signature)

Participant’s contact details:

Address (including postal code):

Home telephone number:

Mobile telephone number:

E-mail address: