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A Study of the Psychological Views and Strategies used
by Irish Chartered Physiotherapists in Rehabilitating
Injured Athletes

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Authors Declaration

I, the undersigned declare that this project which I am submitting is all my own work and that the data presented is authentic.

_____ (Printed Name)

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Abstract:

Background: Current research has identified the importance of psychological interventions in sports injury and their use in sports rehabilitation (Beneka et al. 2007). However, within Europe, only a few studies exist that focus on how physiotherapists deal with the psychological aspect of their practice (Arvinen-Barrow et al. 2007).

Objectives: To assess the views and strategies of Irish Chartered Physiotherapists with regard to the psychological aspect of rehabilitating injured athletes.

Methods: A survey was employed via an online tool called Survey-Monkey to members of the Chartered Physiotherapists in Sports & Exercise Medicine (CPSEM), a clinical interest group of the Irish Society of Chartered Physiotherapists. The measurement tool used was the Physiotherapy & Sport Psychology Questionnaire (PSPQ) which is adapted from the Athletic Trainer & Sport Psychology Questionnaire (ATSPQ) compiled by Larson et al. (2006).

Results: A 31% response rate was attained. Results showed that all physiotherapists believed that athletes were to some degree affected psychologically by injury. The main characteristics of athletes who cope/do not cope successfully with injury were identified. Physiotherapists reported using multiple psychological strategies at work and expressed the need for more training in this field. 23.7% of physiotherapists reported having access to an accredited sports psychologist.

Conclusion: Results suggest that Irish Physiotherapists have good awareness with regard to the psychological aspect of sports injury. This awareness, together with practical experience, highlights the need for competency at treating a range of psychological conditions. This research indicates that physiotherapy education in Ireland may need to have more emphasis on the psychological impact of injury to facilitate more effective rehabilitation.

Keywords: Physiotherapist Attitudes; Athletic Injury; Psychosocial; Rehabilitation.

Introduction:

Current literature suggests that participating in sporting activities has significant benefits for health and that inactivity itself is seen as a risk to health (Checchini et al. 2010). However, the outcome from participation in sports is not always positive. Any athlete, whatever their level of participation, can encounter an injury that may put them out of their sport for an extended period (Taylor & Taylor et al. 1997). The main aim of rehabilitation is to treat the injury and to enable the athletes' recovery to functional fitness as safely and quickly as possible (CSP 1999). Some athletes have been shown to experience emotional difficulties when injured (Weinburg et al. 2003) and that these psychological issues can significantly impact the quality of the rehabilitation process (Pearson et al. 1992).

There has been a gradual growth in the psychological aspects of sports injury over the past 30 years, and consequently psychological interventions have been identified as an extremely important part to the rehabilitation process. For example, issues have been shown to arise in relation to an athlete's ability to cope with an injury. Pain, anxiety, stress and the apprehensions associated with self-esteem, self-efficacy and confidence, combined with the problems relating to an athlete's adherence and motivation to their rehabilitation program, can all be facilitated through the use of psychological interventions (Beneka et al. 2007).

Most sports medicine professionals recognise the importance of addressing the psychological components when working with injured athletes (Crossman et al. 1997). Medical professionals are in an ideal position to educate and assist the athlete in the psychological and physical process of rehabilitation due to their regular contact with the athlete (Wiese et al. 1991). Kolt et al (2003) has outlined four main reasons that physiotherapists are in the best position to provide psychological assistance to an injured athlete; 1) They are usually the primary caretakers dealing with injured athletes on a daily basis (Larson et al. 1996). 2) Physiotherapy uses the technique of touch, which appears to facilitate athletes to open up to the physiotherapist about the psychological issues of their recovery during treatment (Nathan 1999). 3) Psychological problems are often discussed together with physical rehabilitation (Kolt et al. 2003) 4)

Existing studies suggest that athletes themselves feel that physiotherapists are in the ideal position to address the psychological aspects of a sports injury.

Since the physiotherapist's role has been shown to be a key factor in addressing the psychological aspects of rehabilitation, further exploration of their role in relation to supporting the injured athlete is required. However, the majority of these studies have been conducted in America, Canada, Australia, New Zealand and the United Kingdom and there appears to be very little evidence of similar investigations in Europe outside of the UK. Comparisons may be difficult to apply between countries due to the variation and inconsistencies of qualifications and training within associated sports medicine professions. However, the lack of similar research outside of the aforementioned countries is noticeable and may have implications for Irish Chartered Physiotherapists.

Therefore this study attempts to expand on the current research by surveying Irish Chartered Physiotherapists who treat a large number of athletes at various competition levels and sporting activities. The aim of this study is to assess the views and strategies of Irish Chartered Physiotherapists with regard to the psychological aspect of rehabilitating injured athletes.

Methodology

Ethical approval for this study was granted by the University of Limerick Research Ethics Committee (ULREC) number CTREC10 – 32. It is understood that by filling out a questionnaire each participant is giving their informed consent. (See Appendix 1 for email with questionnaire link.)

Participants

A survey questionnaire was emailed to a clinical sub-group of the Irish Society of Chartered Physiotherapists called the Chartered Physiotherapists of Sports and Exercise Medicine (CPSEM) which currently has 497 members. It is hypothesised that physiotherapists in this group would be working within their area of interest and treating

injured sportspeople regularly. 154 questionnaires (31% response rate) were responded to of which 119 were fully completed (24% of members). 70.6%, n = 84 of respondents were female with 29.4% n=35 being male and came from the provinces of Leinster (55.5%), followed by Munster (24.4%), Connaught (13.4%) and Ulster (6.7%). In total, 43.6% of the respondents (n=51) reported holding an undergraduate qualification in physiotherapy as a minimum with 35.9% holding a masters degree (n=42). 8.5% hold a postgraduate certificate (n=10), 8.5% hold a postgraduate diploma (n=10), 35.5% and 2% hold a PhD (n=2). Two respondents (2%) outlined qualifications in other areas which ranged from currently undertaking a Masters Degree in Sports Physiotherapy to completing another degree in another health related field such as Human Kinetics or Sports and Exercise Science. To clarify, the injured 'athlete' in this study was defined to all participants as a patient who presented with an injury which occurred from any sporting activity.

Over 40% (n=48) of the 119 respondents had more than 10 years experience as a physiotherapist with just over 40% (n=47) having 5 years or under and the remainder with 6-10years experience. Of these respondents, 50.4% (n=60) had 5 years or less experience working as a sports physiotherapist with 23% (n=28) having 6–10 years and 23% (n=28) having more than 10 years experience.

Every respondent was employed to some degree within the private sector, eg. a sports injury or physiotherapy clinic, private practice, professional sports team, national governing body or in a national sports institute. 67.8% (n=80) were employed part-time for a sports team, 29.7% (n=35) were not employed by any sports team with just 2.5% (n=3) employed full-time.

Instrument

The Physiotherapist and Sports Psychology Questionnaire (PSPQ) was the instrument used in order to assess Irish Chartered Physiotherapists' and their views on the psychological strategies they use in rehabilitating injured athletes. The PSPQ is a slightly modified version of the Athletic Trainer and Sport Psychology Questionnaire

(Larson et al 1996) used originally by Hemmings and Povey (2002) to survey United Kingdom based chartered physiotherapists. One modification was implemented to this questionnaire by omitting one question which referred to a written referral system to sports psychologists. The questionnaire in this study consists of 10 questions (8 closed and 2 open ended). See Figure 1. for the layout of the questionnaire. (For full view please see Appendix 2).

Figure 1

Question	Type	Criteria
1	Likert Scale	Indicates how often they have come across explicit psychological conditions connected with sports injuries(1= never, 5 = 100% of the time).
2	Open-Ended	Identify top 4 behaviours/characteristics that they believe are present in athletes who cope successfully with injury.
3	Open-Ended	Identify top 4 behaviours/characteristics that they believe are present in athletes who do NOT cope successfully with injury.
4	Yes/No	Have you ever referred an athlete for counselling due to injury?
5	Yes/No	Have you access to an accredited Sports Psychologist?
6	Likert Scale	Lists 13 skills/techniques identified in ATSPQ (Larson et al. 1996) proposed as being important in facilitating injured athlete's recovery process (1=never, 5=100% of the time) to indicate how often. Additional space is provided for additional skills not mentioned.
7	Likert Scale	Asks how often they think athlete's are affected psychologically by injury (1=never, 5 = 100% of the time).
8	Likert Scale	Lists 14 psychological/techniques which asks the physiotherapist to rate which techniques they believed were most beneficial to learn about (1= not important, 5 = very important).
9	Likert Scale	Asks about the physiotherapists' own perceptions about the importance of treating psychological aspects of an athletic injury. (1= not important, 5 = very important).
10	Likert Scale	Asks for the physiotherapists' opinion about the importance of a sport psychology module in existing physiotherapy training. (1= not important, 5 = very important).

Psychometric Properties

Larson et al. (1996) did not report any psychometric properties for this questionnaire apart from the use of the ATPSQ in a pilot study which would have highlighted any problems and inadequacies. Similarly, Hemmings and Povey (2002) used the PSPQ in a preliminary study in the United Kingdom which did not highlight any inadequacies.

For the purposes of the study, we also asked questions about the participant's demographic details (gender, geographic location, professional qualifications, employment status, years of physiotherapy experience as a physiotherapist and a sports physiotherapist). This was to ensure that there was a good representation of the sample of chartered physiotherapists, thereby improving the validity and generalisability of the study.

Procedure and Analysis

This questionnaire was 'housed' on a website called 'SurveyMonkey®™.com' (<http://www.surveymonkey.com>). SurveyMonkey®™ is an easy-to-use software tool for the creation and customisation of online surveys and it was decided to use this tool to distribute the questionnaire as it can be filled out quickly which may improve the response rate. It is also a less costly method of distribution and it more efficient when analysing results due to its intuitive Web interface.

This survey link was emailed to the secretary of the Chartered Physiotherapists of Sports and Exercise Medicine (CPSEM) and the email with this link was forwarded on to all 497 of its members (see Appendix 1). To follow up and increase the response rate a reminder email was sent out six weeks later. It was decided that responses would be included up to January 1st 2011 and any subsequent ones ignored. After the deadline the raw data (Appendix 3) was downloaded and the responses analysed.

Descriptive statistical analysis which is built into the survey monkey website was calculated for all of the closed questions (Questions 1 and 4-10). For the closed

questions that used a Likert Scale, SurveyMonkey[®]™ used an in-built statistical system, where results were calculated by giving an automatic weighted average per column and row. A breakdown of how this average rating is attained is outlined on SurveyMonkey[®]™ website under FAQ (SurveyMonkey[®]™.com 2011: see also Appendix 4). In addition, qualitative data obtained from Questions 2 and 3 were analysed using a thematic analysis. The conceptual categories selected clearly fitted in with categories used in previous studies (Hemmings and Povey, 2002; Arvinen-Barrow et al. 2007; Lafferty et al 2008) so these were used as a benchmark. The answers were colour coded, grouped accordingly and then the results were slotted into each appropriate theme. (See Raw Data: Appendix 3).

Results:

154 questionnaires (31% response rate) were responded to, of which 119 were fully completed (24% of members). To ensure accurate analysis the incomplete questionnaires were disregarded and a filter was applied so that only the 119 fully completed questionnaires were analysed. 70.6%, n = 84 of respondents were female with 29.4% n=35 being male and came from the provinces of Leinster (55.5%; n=66), followed by Munster (24.4%;,n=29), Connaught (13.4%;n=16) and Ulster (6.7%;n=8).

The results showed that 100% of the respondents believe that all athletes are affected psychologically by their injuries to some degree. In addition, every respondent felt there was at least some importance in treating the psychological aspect of an athletic injury. Furthermore, 38.8% (n=45) of the respondents believe that an injury has a psychological effect on the athlete 100% of the time.

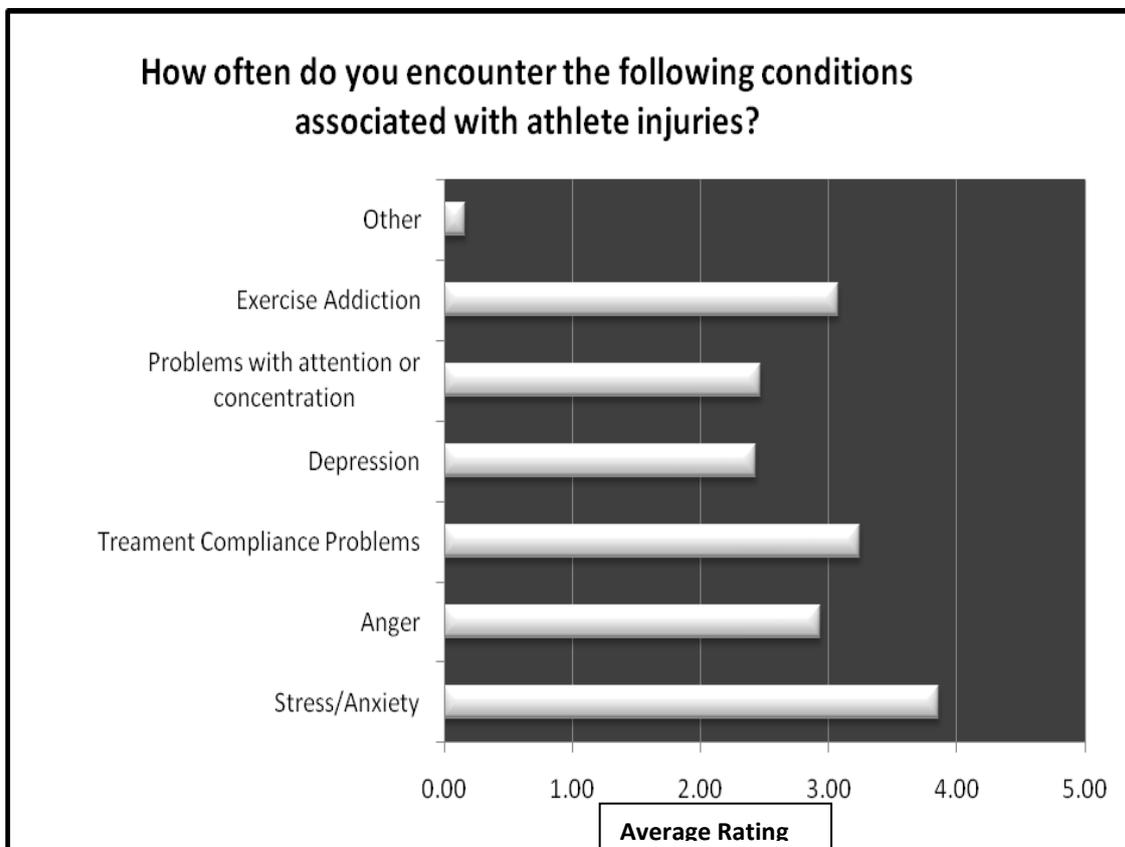
Psychological Conditions

The most commonly encountered psychological conditions among injured athletes by physiotherapists were stress and anxiety. This study showed the second major psychological condition encountered was treatment compliance followed by exercise addiction and anger. Attention problems came in fifth position followed by depression.

12 responses were listed under 'Other' and these ranged from impatience, frustration to anxiety related conditions. Table 1 shows these findings.

Table 1 Psychological Conditions Encountered by Physiotherapists when working with Injured Athletes

How often do you encounter the following conditions associated with athlete injuries?							
Answer Options	Never	Rarely	Occasionally	Often	Very Often	Rating Average	Response Count
Stress/Anxiety	0	4	36	52	27	3.86	119
Tx Compliance Problems	0	21	54	37	7	3.25	119
Exercise Addiction	3	27	53	28	7	3.08	118
Anger	2	40	42	33	2	2.94	119
Problems with attention or concentration	8	59	39	11	1	2.47	118
Depression	13	51	46	9	0	2.43	119
Other	3	0	2	6	1	0.17	12



Characteristics for Coping Successfully with Injury

This study also discovered that physiotherapists detected a variety of psychological characteristics in athletes who cope effectively with being injured. The characteristics identified most frequently were compliance with treatment and the rehabilitation programme (17.2%; n=73) with (14.9%; n=63) listing a positive attitude to injury and life as being of high importance. The top 12 characteristics and frequencies (%) conveyed by physiotherapists is shown on Table 2.

Table 2 Characteristics of Athletes Who Cope Successfully With Injury

Characteristic	Freq (%)	Response Count
Compliance with the treatment programme	17.2	73
Positive and pro-active attitude toward injury	14.9	63
Understanding of the injury	12.7	54
Motivation	10.6	45
Realistic Expectations	10.4	44
Determination	8.3	35
Confidence & trust in themselves, the therapist & rehabilitation program	7.3	31
Patience with themselves and the injury program	6.4	27
Commitment/Dedication	4.0	17
Good listening skills	3.8	16
Other	2.2	10
Good social, emotional and medical support	2.1	9

This question was open-ended in which the physiotherapists were asked to list the top four observed characteristics.

Characteristics for coping poorly with injury

Table 3 demonstrates a variety of characteristics in athlete's who have difficulties in coping successfully with their injuries. The most frequently identified characteristics were a negative attitude towards their injury (21.7%; n=91) non-compliance with the exercise programme (19.6%; n=82), impatience (9.3%; n=39) and stress (7.9%; n=33).

Table 3 Characteristics of Athletes Who Cope Less Successfully with Injury

Characteristic	Freq (%)	Response Count
Negative attitude toward injury	21.7	91
Non-compliant with treatment/exercise	19.6	82
Impatience	9.3	39
Stress	7.9	33
Unrealistic goals and expectations	7.6	32
Anxiety	7.2	30
Lack of trust in therapist and rehabilitation	6.7	28
Poor understanding of the injury and rehabilitation process	6.2	26
Depression	5.3	22
Anger	4.8	20
Exercise Addiction	3.8	16

This question was open-ended in which the physiotherapists were asked to list the top 4 observed characteristics.

Referral to Sports Psychologist

23.7% (n=28) of the respondents had access to an accredited sports psychologist and 20.2% (n=24) had referred athletes for counselling for psychological issues relating to their injury.

Use of Psychological Skills/Techniques as part of Rehabilitation

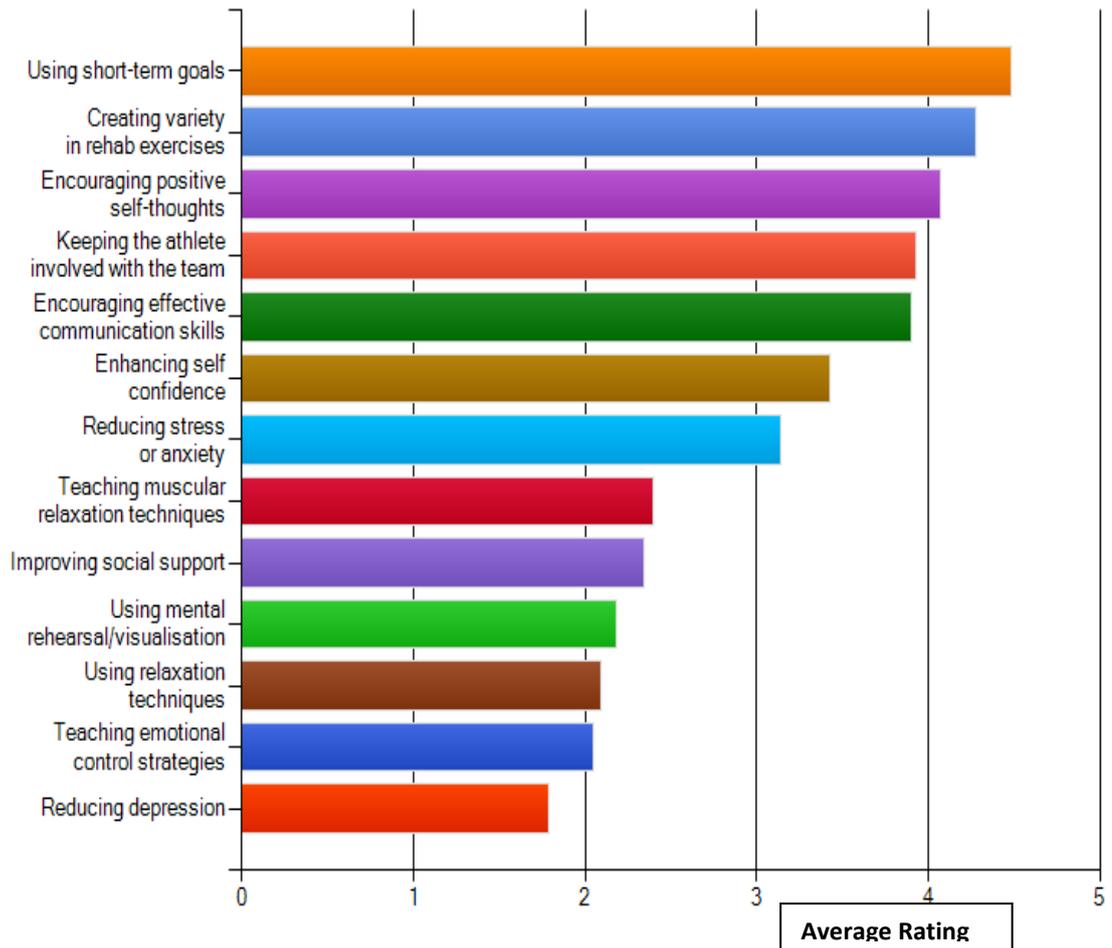
The physiotherapists also reported using a variety of psychological skills and techniques when working with an injured athlete.

Table 4.outlines the most popular psychological strategies (1=never, 5= 100%), from implementing short-term goals (Average rating 4.48) and creating variety in rehabilitation exercises (Average rating 4.28) to encouraging athletes in positive thinking (Average rating 4.08). Least used techniques were improving social support, teaching the use of mental imagery, emotional control strategies or relaxation techniques and reducing depression. Additional techniques reported by physiotherapist’s and not specified by the questionnaire was the use of an occupational therapist in stress management, the use of cognitive behavioural therapy to encourage treatment compliance and encouraging good communication with the athlete’s coach.

Table 4. Psychological Techniques Used by Physiotherapists Working With Injured Athletes

How often do you practise the following psychological skills/techniques when assisting an injured athlete in their recovery from an injury?							
Answer Options	Never Use	25% of Time	50% of Time	75% of Time	100% of Time	Rating Average	Response No.
Using short-term goals	0	6	11	22	80	4.48	119
Creating variety in rehab exercises	1	1	18	43	56	4.28	119
Encouraging positive self-thoughts	3	7	21	36	52	4.07	119
Encouraging effective communication skills	6	10	22	30	48	3.90	116
Keeping the athlete involved with the team	1	14	20	40	43	3.93	118
Enhancing self confidence	8	17	31	39	22	3.43	117
Reducing stress or anxiety	9	30	32	28	18	3.14	117
Teaching muscular relaxation techniques	24	51	21	18	5	2.40	119
Improving social support	35	37	21	21	4	2.34	118
Using mental rehearsal/visualisation	43	39	16	15	6	2.18	119
Using relaxation techniques	40	47	18	9	5	2.09	119
Teaching emotional control strategies	47	35	21	10	4	2.05	117
Reducing depression	58	36	15	5	3	1.79	117

How often do you practise the following psychological skills/techniques when assisting an injured athlete in their recovery from an injury?



Further Education in Psychological Skills

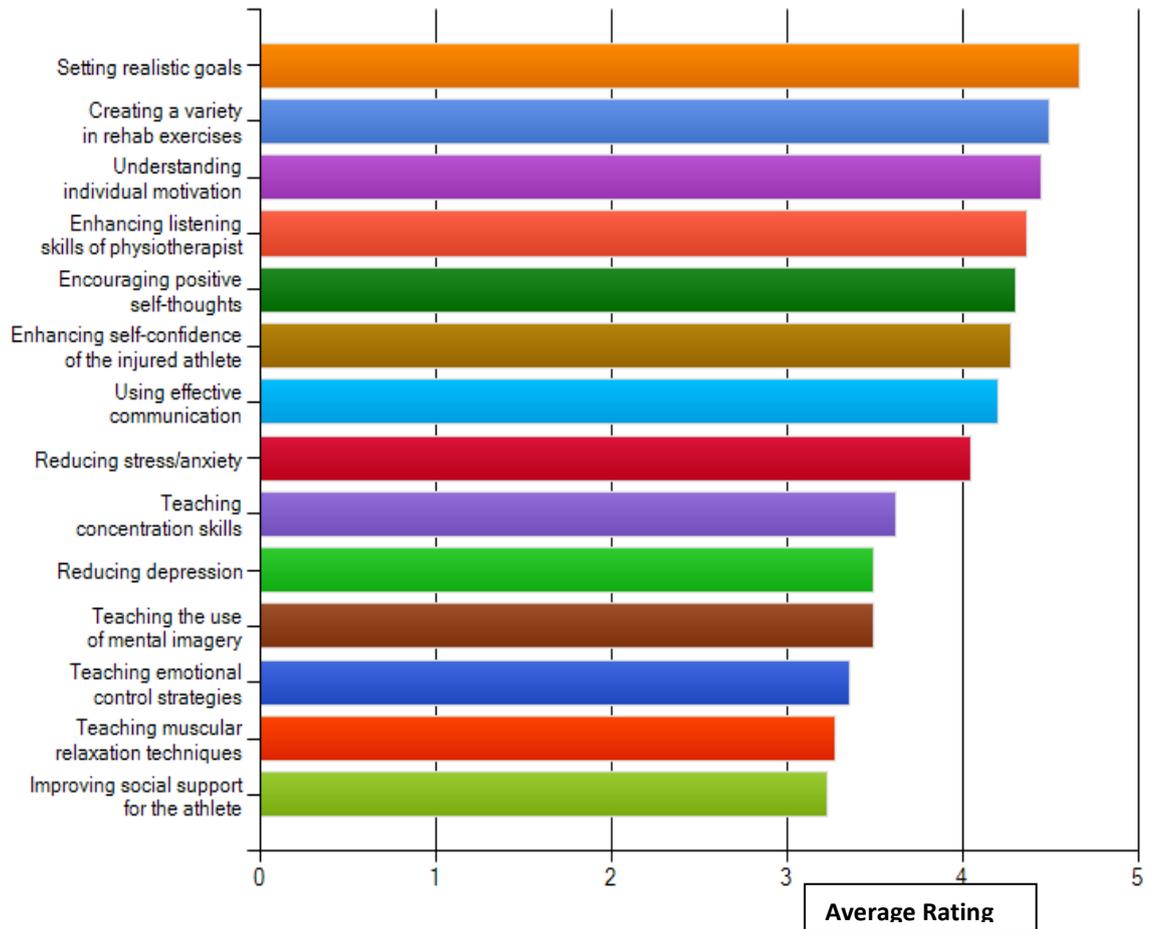
Physiotherapists were also asked to rate how important they felt further training would be for the following skills (1=not important, 5 = very important). Top ranked skills were goal-setting (average rating 4.67), variety in rehabilitation exercises (average rating 4.49), understanding individual motivation (average rating 4.45), enhancing the listening skills of the physiotherapist (average rating 4.37), encouraging positive self-thoughts (average rating 4.30) and enhancing the athlete’s self-confidence (average rating 4.28) The least rated skills on this particular question were reducing depression,

teaching the use of mental imagery and using emotional control strategies or muscular relaxation techniques and improving social support for the athlete and these are outlined in Table 5.

Table 5 Important psychological skills/techniques for physiotherapists to learn

How important do you feel it would be for you to learn more about the following psychological skills/techniques in order to provide the best possible advice for injured athletes?							
Answer Options	Not important	Relatively important	Fairly important	Important	Very important	Rating Avg.	Response No.
Setting realistic goals	1	2	2	25	88	4.67	118
Creating a variety in rehab exercises	1	1	8	37	71	4.49	118
Understanding individual motivation	1	2	7	40	67	4.45	117
Enhancing listening skills of physiotherapist	2	4	14	26	72	4.37	118
Encouraging positive self-thoughts	1	4	12	41	58	4.30	116
Enhancing self-confidence of the injured athlete	1	3	15	42	57	4.28	118
Using effective communication	2	9	12	35	60	4.20	118
Reducing stress/anxiety	2	8	18	44	46	4.05	118
Teaching concentration skills	3	22	23	39	31	3.62	118
Reducing depression	4	23	26	40	24	3.49	117
Teaching the use of mental imagery	5	20	29	40	24	3.49	118
Teaching emotional control strategies	5	21	35	41	16	3.36	118
Teaching muscular relaxation techniques	7	25	30	38	17	3.28	117
Improving social support for the athlete	4	31	31	38	14	3.23	118

How important do you feel it would be for you to learn more about the following psychological skills/techniques in order to provide the best possible advice for injured athletes?



Importance of psychological aspects of injury and education in the field

The results of this study also showed that all respondents considered it to be important to treating the psychological aspects of athletic injury. Every respondent believed that an injured athlete is affected psychologically by injury to some degree. Of all respondents, 80.5% (n= 97) believe that it is either important or very important to treat the psychological aspects of an athletic injury. Furthermore, 98.3% (n=117) believe that the education and training of physiotherapists would benefit from a specific course in sport psychology.

Discussion

The main aim of this study is to assess the view and psychological strategies that Irish Chartered Physiotherapists use when rehabilitating the injured athlete. With a total response rate of 31% (n=154), representing physiotherapists' in each province, it is fair to conclude that this study sample is a good representation of the opinions of Irish Chartered Physiotherapists in general.

The physiotherapists observed a variety of psychological responses to sports injury and outlined the main characteristics that benefit and hinder the athlete within the rehabilitation process. In order to get maximum adherence to treatment when rehabilitating the injured athlete, the physiotherapist's reported using a range of psychological strategies in their work, but they also expressed the importance of being educated in sports psychology to be able to effectively implement them. Furthermore, just (23.7%; n=28) of the respondents had access to an accredited sports psychologist and less than a quarter (20.2%; n=24) had ever referred athletes for counselling in relation to their injury.

The findings from this study paralleled with previous research on sports medicine professionals by showing sports injuries can affect the athlete psychologically as well as physically (Brewer et al. 1991, Wiese et al. 1987; Wiese et al. 1991; Larson et al. 1996; Ford 1993; 1998, Gordon et al. 1991; Hemmings and Povey 2002, Heaney 2006; Arvinen-Barrow et al. 2007). The current research shows that these professionals believe that sports injury has a negative psychological effect on the athlete. Irish chartered physiotherapists cited stress and anxiety as the most observed psychological response which is also consistent with previous research (Hemmings and Povey 2002, Arvinen-Barrow et al. 2007). This study also showed the second major psychological condition encountered was treatment compliance followed by exercise addiction. This was in contrast to the results of studies undertaken in the United Kingdom where exercise addiction was listed as the second major response (Hemmings and Povey 2002; Arvinen-Barrow et al. 2007). However, Arvinen-Barrow et al (2007) listed treatment compliance problems as the third major response. Although findings are in a different

order, the same top three responses were listed in each of these studies, therefore demonstrating that the views of Irish Chartered physiotherapists agree with their British counterparts on the main psychological conditions encountered when dealing with athletic injury.

The Irish physiotherapists' outlined a variety of characteristics and behaviours that they believed enabled certain athletes to cope successfully with being injured when compared with athletes who cope less successfully. The characteristics highly rated for coping favourably with injury is consistent with current literature; compliance with the rehabilitation programme (Brewer et al. 1991; Larson et al. 1996; Ford and Gordon 1998, Gordon et al 1991; Lamba and Crossman 1997; Hemmings and Povey 2002; Arvinen-Barrow et al. 2007), positive attitude and approach to their injury, motivation (Wiese et al. 1991; Larson et al. 1996; Hemmings and Povey 2002), and having an understanding of their injury (Arvinen-Barrow et al. 2007).

The characteristics reported in this study for athletes who cope poorly with injury also support previous research. A negative attitude towards injury, non-compliance and impatience are cited as the most common characteristics observed in injured athletes (Larson et al. 1996; Ford et al. 1998, Gordon et al. 1991; Lamba et al. 1997; Hemmings and Povey 2002; Arvinen-Barrow et al. 2007). In terms of ranking these characteristics, the physiotherapists believe an athlete who has a negative attitude towards their injury is the top characteristic for coping badly with injury. This differed with the opinions of British physiotherapists where it did not feature in their top four characteristics (Hemmings and Povey 2002; Arvinen-Barrow et al. 2007). Other characteristics rated highly in this study for poor outcomes from sports injury were listed as stress and unrealistic expectations of their rehabilitation. Interestingly, a notable difference in this study is that Irish physiotherapists' rate depression much lower on the scale of poor coping characteristics than their British colleagues. It places as the ninth most important characteristic and this differs significantly with studies by Heaney (2006) and Arvinen-Barrow et al (2007) results where it ranks in the top three. The reason for this finding is unclear but the possibility exists that athletes' who have depression present to their physiotherapist as having a negative attitude towards their injury. Current evidence suggests that the presence of a negative attitude can be a symptom of a depressed state

of mind and but it can be difficult to tell which is the cause or effect (Teasdale 2004). As a result, physiotherapists may have difficulty distinguishing the two characteristics which may account for these discrepancies. As Arvinen-Barrow et al. (2007) suggested, the presence of depression has been shown to reduce compliance to medical treatment quite significantly (diMatteo et al. 2000) so this could also be implicated in relation to compliance issues during physiotherapy rehabilitation.

Research into how injured athletes implement successful coping strategies is still in its early stages (Gould et al. 1997) but these findings may be of benefit in helping sports psychologists form effective strategies for helping their athletes in their own supportive professional roles.

According to previous research, the use of psychological interventions with injured athletes has already been identified as an important aspect of improving their rehabilitation (Gilbourne et al. 1996; Wagman et al. 1998; Brewer et al 2000; Hemmings and Povey 2002; Arvinen-Barrow et al. 2007). The results of this study show that Irish Chartered Physiotherapists also implement psychological techniques when treating injured athletes. The responses showed that more than three quarters of the physiotherapists used psychological interventions such as short-term goals and creating variety in rehabilitation exercises 75% of the time. This was akin to studies which asked the same question of British physiotherapists and American based athletic trainers (McKenna et al. 2002; Jevon and Johnston 2003; Hemmings and Povey 2002; Arvinen-Barrow et al. 2007; Lafferty et al. 2008; Larson et al. 1996). Similar to the preliminary study completed by Hemmings and Povey (2002), Irish physiotherapists felt that creating a variety in rehabilitation exercises were of more importance than keeping the athlete involved with the team. However this was in contrast to the United States where athletic trainers viewed keeping the athlete involved with the team as more important (Larson et al. 1996). It is possible these discrepancies could be accounted for by the fact that the physiotherapists in this study were treating more athletes from individual rather than team-based sports and therefore the use of that particular technique was more limited. However, over 67% of the respondents worked part-time for a sports team so it would appear they did have access to a large number of athletes from team-based sports. Further research may need to be done in Ireland to compare

physiotherapists who work with athlete's from individual versus team based sports to get a more detailed breakdown of their views and strategies when implementing psychological techniques.

In contrast to research on UK based physiotherapists (Hemmings and Povey 2002; Lafferty et al. 2008), the physiotherapists in this study also rated the use of short-term goals to be of most importance when using psychological techniques. The reason for this finding is unclear but may point to the fact that short-term goals possess motivational properties (Burton 1989) which was rated as one of the most highly rated characteristics for successfully coping with injury. Goal setting has been shown to enhance motivation and adherence in the early and mid stages of rehabilitation (Evans et al. 2000). Therefore the use of short-term goals and improving the athletes would therefore target optimum compliance to their rehabilitation programme.

Sports psychologists are apparently used extensively in the treatment of injured athletes (Brewer et al. 1991; Wiese et al. 1991; Stevenson et al. 2000) but the results of this study appear to question the use of sports psychologists in Ireland. Only 23.7% of the physiotherapists who responded had access to a clinical sports psychologist. In addition, just 20.2% of respondents had ever referred an athlete to counselling for situations relating to their injuries. This is similar to findings of chartered physiotherapists in the United Kingdom (Hemmings and Povey 2002) and the results of athletic trainers in the U.S.(Larson et al. 1996) where a substandard referral network was also reported. This apparent inaccessibility of sports psychologists in this country could be for a few different reasons. There may be a lack of qualified sports psychologists nationwide due to the specialised nature of its role. Social stigma and the cost of getting treatment may also be barriers to this apparent poor referral system. Establishing a better multi-disciplinary approach and role clarity in relation to athletic injury in this country may need to be investigated to optimise best treatment for the injured athlete.

Consistent with previous research (Brewer et al. 1991; Brewer et al. 1994; Wiese et al. 1991; Larson et al. 1996; Ford et al. 1998; Gordon et al. 1991, Hemmings and Povey 2002), the physiotherapists in this study expressed the need to learn more about psychological skills in order to facilitate the rehabilitative process. This desire to extend

their knowledge in relation to psychological issues is very positive and shows a motivation for personal up-skilling and continuous professional development. When the lack of a referral network to sports psychologists is evident, it is of even more importance for the physiotherapist to guarantee best practice by having a comprehensive knowledge of the theoretical and practical psychological aspects of sports injury (Gilbourne and Taylor 1998).

The physiotherapists reported that a better understanding of psychological interventions could improve the treatment of injured athletes and make for better practitioners. However, Kolt and Anderson (2004) have noted that most physiotherapists do not receive the level of education that is required to implement these psychological interventions during their studies. They also observed that while most undergraduate degrees in physiotherapy do contain an element of psychology education, there is a huge variation in the depth and applicability of the content. If physiotherapists are believed to be an important source of emotional support to the injured athlete and should be using a variety of counselling strategies (Ray et al. 1999), then there is no doubt that Irish physiotherapists should be educated in the basic skills required to recognise and intervene appropriately in the range of psychological conditions they may encounter (Harris 2005).

The results of this study builds upon previous research by demonstrating a clear outline in the psychological skills used with the use of goal setting, creating a variety in rehabilitation exercises and encouraging the athlete in the use of positive self-talk as the most used techniques. These same strategies were also outlined as the most important skills to learn about in addition to being able to understand the athlete's individual motivation and having the ability to communicate effectively. The psychological techniques used least also correlated with the skills the physiotherapists wanted to learn least about. The four skills that Irish physiotherapists were least interested in learning about were; teaching emotional control strategies, using relaxation techniques, reducing depression, and improving social support for the athlete. These findings are similar to the other studies completed in the United Kingdom (Hemmings and Povey 2002; Heaney et al. 2006; Arvinen-Barrow et al. 2007) and also further supported in other research where a lack of knowledge of the application of imagery and relaxation

techniques and its effectiveness means that its being infrequently applied as part of sports rehabilitation (Walsh 2005). These particular psychological techniques have been shown to be more complex in their application (Johnston and Carroll 2000) which may be a reason behind the reluctance of physiotherapists to implement them during rehabilitation. However, rehabilitation imagery has been shown to potentially improve the rehabilitation process by reducing the stress and anxiety that results from athletic injury (Walsh 2005). Therefore, it could be argued that further education in the use of these strategies may be of great benefit to physiotherapists within their work.

The sample size of 154 respondents with 119 questionnaires fully completed was limited and the methodology of a web-based survey could have contributed to this. Online surveys accounts for between 7% and 20% of qualitative research in the USA and while there is no reported figures for Ireland, it is considerably less in the United Kingdom at 1-2% in 2002 (Comley 2003). The survey link was emailed to all 497 members but it is unknown whether these 497 members are currently active member or even employed in Ireland at the time the survey was emailed. Furthermore, while the growth in online research is considerable (Comley 2003), it is not known whether all the email addresses that the survey was deployed were valid and active and whether all members had internet access. Participants may hold multiple email addresses which may not be regularly checked (Sax et al. 2003). These issues would have all contributed to a reduced response rate. In addition, another limiting factor may be as a result of survey fatigue (Porter et al. 2004), where people are being over-surveyed from various sources and are not inspired to participate or complete the survey. This may explain why 154 participants responded but only 119 fully completed the questionnaire. However, online surveys have a flexible, interactive nature and quick response which is an advantage over traditional survey methods (Mertler 2002). It also avoids interview effects which may result from face to face interviews or postal mailing (Duffy et al 2005).

The data analysis for the quantitative questions 1 and 4-10 were also presented differently to previous studies and was shown as an average rating scale. This was due to the online survey system SurveyMonkey[®]™ presenting the data with its own in house Statistical Package which is then downloaded onto Excel (see Raw Data- Appendix 3).

It presented the large amount of detail from the questions with Likert Scales which did not include a standard deviation in its results. A standard deviation does not affect overall results and in-built statistical package used by SurveyMonkey®™ gives an automatic weighted average per column which ensures very accurate results. This was an advantage of using an online survey to previously undertaken studies which used the PSPQ and were postal based (Hemmings and Povey 2002; Heaney et al. 2006; Arvinen-Barrow et al. 2007; Lafferty et al. 2008). However, it could be argued that difference in data analysis between the studies could have accounted for some of the slight differences in results for some of the questions. Similarly, although the open ended questions were analysed by thematic analysis of commonly recurring themes, it is possible that there may have been some discrepancies with others studies due to the subjective nature of categorising certain answers.

Conclusion:

The research findings in this study leave an obvious impression. This study indicated that chartered physiotherapists in Ireland have good awareness with regard to the psychological aspect of sports injury and believe the psychological processes involved for injury recovery are extremely important. These processes varied; from the psychological responses that athlete's had to their injury, to the characteristics observed in successfully coping with injury, to the types of psychological techniques implemented in rehabilitation. Irish physiotherapists were in no doubt of the significance of using psychological strategies in their work as part of effective sports injury rehabilitation.

Similar to current literature, our findings show physiotherapists in Ireland believe that further learning and a better ability to grasp the principles behind sports psychology would make them a better practitioner. They also expressed a desire for further education in the use of psychological skills and techniques within their daily practise. The particular skills that the physiotherapists expressed a desire to have further education in were the ones most employed in their daily work. Additionally, the skills they showed less interest in improving were the ones used least frequently in practise.

This study also showed that less than a quarter of the respondents have access to a clinical psychologist so it makes sense to endeavour to bridge that gap by educating the physiotherapists in this country in the psychological aspects of sports injury.

The findings of this study suggest that Irish Physiotherapists felt that a better understanding of psychological strategies when rehabilitating injured athletes would improve their work. It would also enable them to have the confidence to know when an athlete's behaviour is beyond the scope of their practice and needs to be referred to counselling thereby ensuring the best possible professional treatment.

Therefore it can be concluded that physiotherapy education at undergraduate and post-graduate level in Ireland may need to be reviewed. Exploring the application of a standardised sports psychology module for physiotherapy students as either a compulsory or elective module would be highly recommended.

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Appendices

Appendix 1 – Email

To all members,

I am a 4th year student from the University of Limerick undertaking a study as part of my Final Year Project which aims to survey Irish Chartered Physiotherapists' and their views on the psychological strategies they use in rehabilitating injured athletes. An injured "athlete" refers to any patient who presents with an injury which has occurred from any sporting activity.

This survey is called the Physiotherapist and Sports Psychology Questionnaire (PSPQ) and permission from the authors has been obtained to use this as part of my project. Full ethical approval has been granted for this survey by the University of Limerick Clinical Therapies Research and Ethics Committee (CTREC 10-32).

I would greatly appreciate you taking 5 minutes of your time to complete this survey by clicking on the link below and I will endeavour to make you aware of the outcomes and results of the study as soon as it is completed.

<http://www.surveymonkey.com/s/CLWV2YH>

Thanking you in advance for your help.

Kind regards,

Liz Hussey.

(University of Limerick 4th Year Physiotherapy Student)



Liz Hussey Physiotherapist and Sports Psychology Questionnaire

1. Demographic Information

Thank you for taking the time to complete this survey. It will take just 5 minutes of your time.

This questionnaire aims to measure physiotherapists' views on the psychological aspects of how they rehabilitate injured athletes. An injured 'athlete' refers to any patient who presents with an injury which has occurred from any sporting activity.

Full ethical approval has been granted for this survey by the University of Limerick Clinical Therapies Research and Ethics Committee (CTREC 10-32)

Please answer the following questions to the best of your ability. Data supplied will provide essential information in terms of future implications of this research. Feel free not to answer any of the demographic information that you do not feel comfortable with. All data will be treated with confidentiality and your anonymity will be assured at all times.

Gender:

- Male
- Female

Geographical Location:

- Munster
- Leinster
- Connaught
- Ulster

Professional Qualification - (Please select your highest qualification)

- Undergraduate Qualification
- Postgraduate Certificate
- Postgraduate Diploma

Masters

PhD

Other (please specify)

Employment Status (If employed in more than one area please select all relevant)

Yes

Private Practice/Sports Injury Clinic	<input type="checkbox"/>
Hospital Based Work	<input type="checkbox"/>
Community Care	<input type="checkbox"/>
Other	<input type="checkbox"/>

Other (please specify)

Do you work with a Sports Team?

No

Part-time

Full-time

Number of years experience as a Physiotherapist

0-5

6-10

11+

Number of years experience as a Sports Physiotherapist

Number of years experience as a Sports Physiotherapist N/A

0-5

6-10

11+

Next



Liz Hussey Physiotherapist and Sports Psychology Questionnaire

2. The Physiotherapist and Sports Psychology Questionnaire

In this questionnaire an 'Athlete' refers to any patient who presents with an injury which has occurred from a sporting activity.

Q.1 How often do you encounter the following conditions associated with athlete injuries?

	Never	Rarely	Occasionally	Often	Very Often
Stress/Anxiety	<input type="checkbox"/>				
Anger	<input type="checkbox"/>				
Treatment Compliance Problems	<input type="checkbox"/>				
Depression	<input type="checkbox"/>				
Problems with attention or concentration	<input type="checkbox"/>				
Exercise Addiction	<input type="checkbox"/>				
Other	<input type="checkbox"/>				

Other (please specify)

Q2. Please identify the top 4 behaviours/characteristics you believe to be present in athletes who cope successfully with injury.

- 1
- 2
- 3
- 4

Q3. Please identify the top 4 behaviours/characteristics you believe to be present in athletes who do NOT cope successfully with injury.

1	
2	
3	
4	

Q4. Have you ever referred an injured athlete to counselling for situations related to their injuries?

- Yes
- No

Q5. Do you have access to a Clinical Sports Psychologist?

- Yes
- No

Q6. How often do you practise the following psychological skills/techniques when assisting an injured athlete in their recovery from an injury?

	Never Use	25% of Time	50% of Time	75% of Time	100% of Time
Keeping the athlete involved with the team	<input type="checkbox"/>				
Using short-term goals	<input type="checkbox"/>				
Creating variety in rehab exercises	<input type="checkbox"/>				
Encouraging positive self-thoughts	<input type="checkbox"/>				
Encouraging effective communication skills	<input type="checkbox"/>				
Teaching emotional control strategies	<input type="checkbox"/>				
Using mental rehearsal/visualisation	<input type="checkbox"/>				
Using relaxation techniques	<input type="checkbox"/>				
Teaching muscular	<input type="checkbox"/>				

	Never Use	25% of Time	50% of Time	75% of Time	100% of Time
relaxation techniques					
Reducing depression	<input type="checkbox"/>				
Improving social support	<input type="checkbox"/>				
Reducing stress or anxiety	<input type="checkbox"/>				
Enhancing self confidence	<input type="checkbox"/>				
Other (please specify)	<input type="text"/>				

Q7. How often do you believe an athlete is affected psychologically by an injury?

	Never	25% of Time	50% of Time	75% of Time	100% of Time
	<input type="checkbox"/>				

Q8. How important do you feel it would be for you to learn more about the following psychological skills/techniques in order to provide the best possible advice for injured athletes?

	Not important	Relatively important	Fairly important	Important	Very important
Improving social support for the athlete	<input type="checkbox"/>				
Reducing depression	<input type="checkbox"/>				
Teaching muscular relaxation techniques	<input type="checkbox"/>				
Teaching the use of mental imagery	<input type="checkbox"/>				
Teaching concentration skills	<input type="checkbox"/>				
Using effective communication	<input type="checkbox"/>				
Understanding	<input type="checkbox"/>				

	Not important	Relatively important	Fairly important	Important	Very important
individual motivation	<input type="checkbox"/>				
Setting realistic goals	<input type="checkbox"/>				
Creating a variety in rehab exercises	<input type="checkbox"/>				
Reducing stress/anxiety	<input type="checkbox"/>				
Teaching emotional control strategies	<input type="checkbox"/>				
Enhancing listening skills of physio	<input type="checkbox"/>				
Enhancing self-confidence of the injured athlete	<input type="checkbox"/>				
Encouraging positive self-thoughts	<input type="checkbox"/>				
Other (please specify)	<input type="text"/>				

Q.9 How important do you feel it is to treat the psychological aspect of an athletic injury?

	Not important	Relatively important	Fairly important	Important	Very important
	<input type="checkbox"/>				

Q10. How important is it for a Physiotherapist to be educated/trained in a sports psychology course?

	Not important	Relatively important	Fairly important	Important	Very important
.	<input type="checkbox"/>				

Prev Done

Appendix 3 –Raw Data

Question 1: How often do you encounter the following conditions associated with athlete injuries?

Answer Options	Never	Rarely	Occasionally	Often	Very Often	Rating Average	Response Count
Stress/Anxiety	0	4	36	52	27	3.86	119
Anger	2	40	42	33	2	2.94	119
Treatment Compliance Problems	0	21	54	37	7	3.25	119
Depression	13	51	46	9	0	2.43	119
Problems with attention or concentration	8	59	39	11	1	2.47	118
Exercise Addiction	3	27	53	28	7	3.08	118
Other	3	0	2	6	1	3.17	12

Question 2: Athletes who cope *successfully* with being injured

Insight	understanding of injury
Active coping strategy: try to get back to sport asap	determination
Positive work ethic	positivity
determination	determination
Dedication	dedication/commitment
Confidence	confidence & trust in therapist
optimism	positivity
They listen to your advice	compliance
Early acknowledgement of injury	understanding of injury
Determination	determination
Positive attitude	positivity
determination	determination
Determination to return to sport	determination
Self belief	confidence & trust in therapist
Positivity	positivity
Patience	patience
determination	determination
patience	patience
Positivity	positivity
Seeking treatment/ Active listening, appropriate questioning	good listening skills
positive attitude	positivity
Previous injury	understanding of injury
realistic short and long term goals	realistic expectations
listening skills	good listening skills
Patience	patience
Compliance	compliance

Motivation	motivation
insightfulness	understanding of injury
acceptance	positivity
General compliance	compliance
Positive attitude	positivity
High Self Esteem	confidence & trust in therapist
Confidence	confidence & trust in therapist
view the injury as a challenge	determination
Dedication	dedication/commitment
motivated	motivation
motivation to adhere to rehab programme	compliance
Understanding injury	understanding of injury
Motivated	motivation
Common Sense	understanding of injury
Motivated	motivation
Sense of perspective	realistic expectations
Motivation	motivation
Acceptance/understanding of pathology	understanding of injury
motivation	motivation
Respect for the therapist	confidence & trust in therapist
positive outlook on life in general	positivity
motivated	motivation
Motivation	motivation
patience - give necessary time to heal	patience
Determination	determination
elation	OTHER
self confidence	confidence & trust in therapist
Motivation	motivation
positive attitude	positivity
knowledge of injury	understanding of injury
confidence of place on team - support of coach	confidence & trust in therapist
Self efficacy - they believe they will get better	determination
understanding of injury	understanding of injury
Understanding of Injury	understanding of injury
Realistic expectations	realistic expectations
Understanding of injury	understanding of injury
positive attitude	positivity
compliance	compliance
optimism	positivity
Trust in rehab program	confidence & trust in therapist
Ability to maintain medium and long term goals	compliance
determination	determination
Optimism	positivity
Realism	realistic expectations
drive	motivation
Good understanding of injury and prognosis	understanding of injury
determination	determination
Determination	determination
Realistic expectation of injury timeframe	realistic expectations

ambition	motivation
reasonable expectations	realistic expectations
motivated	motivation
Motivation	motivation
Compliance	compliance
Positive Attitude	positivity
motivation	motivation
Treatment compliance	compliance
Adherence to treatment regime	compliance
determination	determination
Patience	patience
Patience	patience
Positive outlook on life	positivity
Logical Thinking	realistic expectations
Positive outlook	positivity
self-efficacy	dedication/commitment
Ability to take advice	compliance
Compliance	compliance
acceptance	positivity
positive attitude	positivity
positive attitude	positivity
positive outlook	positivity
determination	determination
Motivated	motivation
motivation to get back to sport	motivation
acceptance and understanding of diagnosis	positivity
positive attitude	positivity
patience	patience
performance based attitude to goals (not reward based)	realistic expectations
Dedication	dedication/commitment
Maturity	realistic expectations
Compliance	compliance
determination	determination
self belief	confidence & trust in therapist
AWARENESS OF EXPECTED OUTCOMES/MECHANISMS OF HEALING	realistic expectations
Self-motivation	motivation
positive attitude	positivity
Motivation	motivation
motivated	motivation
balanced personality	realistic expectations
determined	determination
Focus on what they can do	motivation
Empathy	realistic expectations
Motivated to achieve	motivation
General positivity in life outlook	positivity
postive mental attitude	positivity
Focus	dedication/commitment
Patience	patience
compliance	compliance

Do exercises	compliance
Compliance with treatment	compliance
patience	patience
Happy	positivity
eager to return to sport	dedication/commitment
Listen to advice	good listening skills
Ability to question/understand	understanding of injury
Understanding	understanding of injury
Co-operation	compliance
Ambition and drive to be successful	determination
compliance	compliance
Educated	understanding of injury
Behavioural changes to lifestyle and treatment compliance	compliance
goal setting	realistic expectations
Motivation	motivation
good understanding of condition and associated problems/biomechanical issues	understanding of injury
compliance	compliance
Understanding/intelligence	understanding of injury
Motivation	motivation
Commitment	dedication/commitment
determination	determination
confidence in clinician	confidence & trust in therapist
Ability to listen and take advice from professional	compliance
Interest in the rehab of the injury	understanding of injury
Passion for sport	dedication/commitment
Desire to return to Sport	dedication/commitment
view the injury as telling you you are doing something incorrect	understanding of injury
Patience	patience
educated re their injury and aware of over training during rehab programme	understanding of injury
good support structure home and team	good social support
Full compliance with treatment	compliance
Knowledgable/Educated on extent of problem	understanding of injury
Good communication with therapist and coach	good listening skills
Determined to succeed	determination
Intelligence	understanding of injury
Acceptance	understanding of injury
Motivation	motivation
ambition	dedication/commitment
Active/positive approach to rehab - belief	compliance
self confident	confidence & trust in therapist
realistic	confidence & trust in therapist
Drive	realistic expectations
compliance with treatment	determination
Trust in Practitioners	compliance
relief	confidence & trust in therapist
compliance	compliance
Graded retrun to sport	realistic expectations
determination	determination
short term goals	realistic expectations

compliance with treatment incl rest if required	compliance
Previous experience of injury	understanding of injury
compliance with rehab	compliance
Compliance	compliance
compliance with exercises	compliance
Compliance with HEP and rest!	compliance
belief in me as physiotherapist	confidence & trust in therapist
motivation	motivation
dedication	dedication/commitment
accepting lay off period	positivity
positive attitude towards rehab	positivity
compliance	compliance
Motivated	motivation
Patience	patience
acceptance of injury	positivity
take responsibility for injury and recovery	understanding of injury
patience	patience
Positivity	positivity
Experience	understanding of injury
good compliance	compliance
Goal setting	realistic expectations
positive thinking	positivity
Understanding of injury	understanding of injury
Motivation	motivation
compliance with treatment and advise	compliance
compliance	compliance
Positive attitude	positivity
Determination	determination
acceptance	positivity
Positive outlook	positivity
Compliance - doing what they are told	compliance
Successful in other parts of their life	positivity
Patience	patience
Good ability to goal set	realistic expectations
positive outlook	positivity
Strong work ethic	dedication/commitment
Specific Sport	realistic expectations
compliance with programme	compliance
trust in medical team	confidence & trust in therapist
willingness to listen to advice and follow exercise regime	good listening skills
good understanding of healing	understanding of injury
patience	patience
positive outlook	positivity
ability to trust professional	confidence & trust in therapist
adhere to advice	compliance
listen and follow advice	compliance
high level of attention	dedication/commitment
compliance with exercise plan	compliance
Realism	realistic expectations

Motivation/determination	motivation
maturity	realistic expectations
confidence	confidence & trust in therapist
COMPLIANCE WITH REHABILITATION PROTOCOL	compliance
Compliance with rehab	compliance
good understanding of the problem	understanding of injury
Concentration	dedication/commitment
compliant	compliance
listener	good listening skills
logical	realistic expectations
know that its temporary	understanding of injury
Optimism	positivity
Good team and management support and understanding	good social support
Eager to return to sport	determination
seeing the bigger picture	realistic expectations
Belief	confidence & trust in therapist
Compliance with Rehab	compliance
Determination	determination
Graduated return to sport	realistic expectations
ability to adapt to injury presence	understanding of injury
perseverance	dedication/commitment
Realistic	realistic expectations
anxiety if not getting better quick enough	realistic expectations
Adherent with rehab/exercises	compliance
Self confidence	confidence & trust in therapist
Practical	realistic expectations
will power	motivation
ability to listen	good listening skills
Self motivated	motivation
Agreed SMART goals	realistic expectations
competitiveness	motivation
Personality	positivity
willingness to work on another area of the body while injured so they can return to sports an improved athlete overall	positivity
determination	determination
Compliance	compliance
Understanding of role of both parties	understanding of injury
Understanding	understanding of injury
patience	patience
realistic goal planning	realistic expectations
Positive outlook	positivity
Ability to identify realistic short term and long term goals	realistic expectations
Focused / Good communicator	determination
Interests outside of sport	good social support
are a confident individual	confidence & trust in therapist
Good listening skills	good listening skills
know their limits	realistic expectations
overall achiever type personality	determination
Allowed to comply with best treatment from coach	compliance
Patience	patience

Positivity	positivity
Focused on goals	determination
Ability to listen	good listening skills
Determination	determination
Previous injury experience	understanding of injury
optimism	positivity
Attention to detail	dedication/commitment
keen team players	OTHER
patience	patience
Ability to Listen	good listening skills
understands their injury	understanding of injury
Acceptance	positivity
success	determination
motivation	motivation
compliance	compliance
discipline with rehab	compliance
clear plan with functional goals and specific time frames	realistic expectations
confidence in my ability as physio	confidence & trust in therapist
Open communication - being able to express the characteristics of the pain	understanding of injury
do not try to rush comeback	compliance
Determination	determination
trust in the physio	confidence & trust in therapist
Coach's understanding of importance of rehab time	good social support
compliance with all aspects of rehab process	compliance
positivity	positivity
motivation	motivation
completing prescribed exercises	compliance
understanding the need for rest	compliance
understanding the injury	understanding of injury
Patience	patience
compliance	compliance
good exercise compliance	compliance
Enthusiasm	motivation
Education/knowledge of specific injury	understanding of injury
receptive	good listening skills
trusting	confidence & trust in therapist
Patience	patience
Education	understanding of injury
balanced generally in their thinking / approach	realistic expectations
acceptance	positivity
Patience	patience
patience	patience
Goal orientated	realistic expectations
Thinking of long term prognosis as opposed to next match	realistic expectations
Driven	motivation
Diligence/compliance	compliance
Strong mentally	dedication/commitment
Maintaining Focus	dedication/commitment
Level of sport	OTHER

positive outlook	positivity
compliance with HEP	compliance
dedication to rehabilitation	dedication/commitment
realistic goals	realistic expectations
dedication	dedication/commitment
acceptance of injury	positivity
ability to adhere to treatment and rehab plan	compliance
adhere to rehab program	compliance
caution	OTHER
proactivity	positivity
positive state of mind	positivity
Patience	patience
Patience	patience
willingness to learn	compliance
good communicater	good listening skills
CLEAR GOAL/DATE WHEN FITNESS MUST BE RESTORED	realistic expectations
Patience/Good insight	patience
adherence to prescribed program	compliance
Perserverance	dedication/commitment
focussed	dedication/commitment
dedicated	dedication/commitment
compliant	compliance
optimistic attitude	positivity
Intelligence	understanding of injury
Good understanding of injury and management	understanding of injury
Intelligence	understanding of injury
Trust	confidence & trust in therapist
Realistic goals	realistic expectations
Faith (in practitioner and physiotherapy in general)	confidence & trust in therapist
Knowledgable about injuries	understanding of injury
determination/positive outlook	determination
acceptance	understanding of injury
Well read about their injury	understanding of injury
well focused	dedication/commitment
Don't overdo it too soon	realistic expectations
Patience	patience
Motivation	motivation
self empowerment	motivation
motivation	motivation
Good social/ team support network	good social support
Acceptance of current injury	positivity
leadership	positivity
Intelligence	understanding of injury
patience	patience
Determination	determination
Ability to take on advice given	compliance
Willingness to improve	compliance
positivity	positivity
balanced perspective	realistic expectations

realistic outlook	realistic expectations
Good communication skills	good listening skills
Organised	positivity
Adherence to treatment	compliance
Perspective	realistic expectations
use their own initiative	realistic expectations
Positive attitude	positivity
Past Experience	understanding of injury
Strong self worth	confidence & trust in therapist
Good support background	good social support
Patience	patience
Support of other team players/management	good social support
Resting from the aggravating activity	understanding of injury
love of their sport	dedication/commitment
self-driven	motivation
Good Body Awareness	OTHER
sense of humour	OTHER
Compliance	compliance
pride	determination
ability to adapt	positivity
trust in medical staff	confidence & trust in therapist
goal setting	realistic expectations
contact with athletes that have had injury	good social support
professional attitude towards injury - listen and do	positivity
Self awareness and Knowledge of their body and how it reacts to injury	understanding of injury
positive attitude	positivity
Motivation	motivation
following advice re: return to training	compliance
eagerness to return to sport	motivation
strong will to recover	motivation
realistic	realistic expectations
compliance	compliance
easing off on other fitness/strength work	compliance
trust in the physiotherapist	confidence & trust in therapist
Compliance to treatment	compliance
belief in the physiotherapist	confidence & trust in therapist
open and good communicator	good listening skills
Compliance	compliance
Compliance	compliance
love of their sport	OTHER
ability to comprehend and understand plan of care	understanding of injury
committed	dedication/commitment
Adherence to rehabilitation program	compliance
Positive mind frame	positivity
ability to listen / understand/ and comply	compliance
insight	understanding of injury
Good pain threshold	dedication/commitment
empowerment	confidence & trust in therapist
Motivated	motivation

Independence - not listening to coaches' demands etc	confidence & trust in therapist
Well rounded	OTHER
Understanding	understanding of injury
Those who have a good social support network	good social support
Communication	good listening skills
Age	understanding of injury
has alternative interests/training mechanisms	OTHER
Appropriate early management	understanding of injury
openmindedness about trying other forms of exercise to maintain fitness while injured	OTHER
motivation	motivation
passion	motivation
compliance with professional advice	compliance
determination and optimism regarding recovery	positivity
easy going	OTHER
tenacity	determination
determination to return	determination
Self confidence	confidence & trust in therapist
Understanding	understanding of injury
commitment	dedication/commitment
rounded individual	realistic expectations
PRAGMATISM	realistic expectations
Listen well	good listening skills
Drive	motivation
good body awareness	OTHER
hard working	dedication/commitment
realistic	realistic expectations
content with their lot in life	positivity

	Total	Rank	% Frequency
Totals			
Positivity	63	2	14.9
Compliance	73	1	17.2
Understanding of injury	54	3	12.7
Realistic expectations	44	5	10.4
Motivation	45	4	10.6
Patience	27	8	6.4
Determination	35	6	8.3
Confidence in themselves&therapist	31	7	7.3
Good listening skills	16	10	3.8
Good social support	9	12	2.1

Other	10	11	2.2
Dedication/commitment	17	9	4
Total	424		

Question 3: Athletes who cope *unsuccessfully* with being injured

Type A personality	impatience
Less motivated to go through rehabilitation	noncompliance
Lack of understanding	poor understanding
perfectionists	unrealistic goals
Blame	negative attitude to injury
Inpatient	impatience
pessimism	negative attitude to injury
Don't listen	noncompliance
Catastrophising/all or nothing approach	negative attitude to injury
anxiety	anxiety
Impatient	impatience
compliance levels	noncompliance
Worry about injury/return to sport	anxiety
Worry	anxiety
Frustration	impatience
Impatience	impatience
lazyness	noncompliance
impatient	impatience
Acceptance of injury and the period of time involved in rehabilitation	unrealistic goals
Poor clinical attendance, not actively seeking treatment	negative attitude to injury
negative attitude	negative attitude to injury
Previous injury	anger
impatience	impatience
agression	anger
Impatience	impatience
Strong personal beliefs ie strong minded, closed minded	negative attitude to injury
Negativity	negative attitude to injury
lack of insight	poor understanding
therapy shopping	Lack trust
Unrealistic goal setting	unrealistic goals
Negative attitude	negative attitude to injury
Poor self esteem	depression
Catastrophisation	negative attitude to injury
impatience	impatience
Over-informed (Google geniuses!!)	Lack trust
unaware of risks of returning too early to competition	poor understanding
poor motivation levels	negative attitude to injury
seeking multitude of treatments	Lack trust
Poor understanding	poor understanding
Anger	anger

High Level Athletes	unrealistic goals
obsession	exercise addiction
Impatience	impatience
Unable to understand pathology process	poor understanding
fear	anxiety
lack of faith in therapist	Lack trust
negative personalities	negative attitude to injury
dependance	depression
Impatience	impatience
emotional	stress
Laziness	noncompliance
distress	stress
inability to adapt	noncompliance
Obsessive about their injury	exercise addiction
stress due to external pressures eg coaches	stress
poor understanding of injury	poor understanding
feel place on team is threatened - hide/do not disclose full s&s	anxiety
fatalism -feeling it's the end of their world	depression
negativity regarding injury	negative attitude to injury
Lack of Compliance	noncompliance
Impatience	impatience
inability to rest from sport	exercise addiction
negative attitude	negative attitude to injury
non-compliance	noncompliance
distracted	stress
not taking adequate break from competition	exercise addiction
over training	exercise addiction
non-compliance	noncompliance
Pesimism	negative attitude to injury
Stubbornness	negative attitude to injury
frustration	anger
poor understanding of injury and rehab and unrealistic goals re rehab	poor understanding
catastrophising	depression
Unmotivated	negative attitude to injury
Lack of compliance with treatment and rehab	noncompliance
poor belief/trust in physiotherapy/physiotherapist	negative attitude to injury
risk taker - extroverted behaviour	negative attitude to injury
poor impression of physiotherapy	Lack trust
Impatient	impatience
Poor compliance	noncompliance
obsessive about their sport	exercise addiction
Blame	negative attitude to injury
Poor compliance	noncompliance
Failure to rest	exercise addiction
frustration	anger
Isolated	depression
Impatience	impatience
Stressful	stress
Impatience	impatience

Catastrophisers	depression
catastrophising	depression
Exposed to / takes bad advice	poor understanding
compliance	noncompliance
denial	negative attitude to injury
seeking multiple opinions - lack trust	Lack trust
inability to graduate return to sport	noncompliance
stress/ anxiety	stress
impatient	impatience
impatience to get back to sport	impatience
exercise addiction	exercise addiction
depression	depression
impatience	impatience
those that look for external reasons for set backs	negative attitude to injury
lazy	noncompliance
Inexperience	poor understanding
Stress/anxiety/worry	anxiety
impatience	impatience
anxious	anxiety
LACK OF FOCUS ON REHAB	noncompliance
Won't listen/Poor insight	noncompliance
poor attitude	negative attitude to injury
Lack of attention	negative attitude to injury
lack of concentration	negative attitude to injury
lazy	noncompliance
anxiety	anxiety
stressed individuals	stress
Results driven	stress
Blame attitude towards the injury ie other team mate, management, surface	negative attitude to injury
Lack of confidence	Lack trust
control freaks	negative attitude to injury
Resentful	anger
Overally confidence	unrealistic goals
Disbelief (those who go for various"second opinions)	Lack trust
Don't do exercises or follow advice	noncompliance
poor treatment compliance	noncompliance
impatience	impatience
Anxious	anxiety
fear	anxiety
Don't take advice	noncompliance
Self doubt in athletic ability	Lack trust
Fear	anxiety
Fear	anxiety
unwilling to help themselves (lack of self drive)	depression
anxious	anxiety
Succession of longer term injuries	unrealistic goals
Seeking quick fix miracle treatment, seen behaviour as exhaustive	unrealistic goals
inappropriate questioning	unrealistic goals
lack of personal responsibility	unrealistic goals
Motivation	depression

non compliance to progressive rehab programmes and lack of understanding regarding the step by step approach that is necessary	noncompliance
stress	stress
Lack of understanding	poor understanding
Non compliance with advice	noncompliance
Rejection	noncompliance
impatience	impatience
self importance	Lack trust
Inability to accept professional advice	noncompliance
Poor communication skills	negative attitude to injury
reluctance to participate in sport	negative attitude to injury
Lack of interest in treatment	noncompliance
lack of understanding of the injury	poor understanding
Impatient (too keen to play)	impatience
dont believe physio is of any benefit	Lack trust
poor mood levels - depression	depression
poor understanding of treatment	poor understanding
Poor compliance	noncompliance
past experience	negative attitude to injury
Younger Athletes who are reluctant to rest	noncompliance
immaturity	negative attitude to injury
Addiction to exercise	exercise addiction
Poor result / bad experience of previous injury	negative attitude to injury
pessimism	negative attitude to injury
impatience	impatience
self obsessed personalities	negative attitude to injury
stressing	stress
Inability to Listen	noncompliance
not listening	noncompliance
Lack of focus if long term injury	noncompliance
anxiety	anxiety
poor listening/concentration skills	noncompliance
lack of trust	Lack trust
irrational approach to rehab	noncompliance
poor compliance with rehab	noncompliance
continue to do exercises/things advised not to	noncompliance
impatience at not being able to exercise and thus give time to heal adequately	impatience
poor understanding of injury causes/problem	poor understanding
Laziness	noncompliance
anxiety	anxiety
lack of understanding of benefit of rehab	poor understanding
poor compliance with program	noncompliance
anger	anger
self-pity	depression
frustration	anger
obsession with minor details	unrealistic goals
laziness	noncompliance
Not complying with treatment	noncompliance
Impatience	impatience

lack of common sense	poor understanding
failure to take responsibility for recovery/injury	negative attitude to injury
Undisciplined	noncompliance
Unrealistic expectation of treatment	unrealistic goals
poor compliance	noncompliance
low attention span	noncompliance
negative thinking	negative attitude to injury
Fear avoidance behaviour	negative attitude to injury
Passive nature	negative attitude to injury
unwillingness to adhere to advise	noncompliance
overtraining	exercise addiction
Negative attitude	negative attitude to injury
Non compliance with regime	noncompliance
impatience	impatience
Anger	anger
Non-compliance	noncompliance
anxious	anxiety
Poor concentration	negative attitude to injury
Introverted people	depression
passivity	unrealistic goals
Lack of patience - returns too early	negative attitude to injury
stress/anxiety	stress
impatience	impatience
poor attitude	negative attitude to injury
impatience	impatience
poor understanding of injury	poor understanding
short-sighted	unrealistic goals
lack of acceptance of injury	negative attitude to injury
controlling behaviour	negative attitude to injury
overeagerness	impatience
anxiety/worry	anxiety
fear	anxiety
not bothered	negative attitude to injury
Tunnel vision	unrealistic goals
Poor concentration	negative attitude to injury
lack of attention	negative attitude to injury
limited confidence	impatience
OVER-EAGERNESS TO RETURN TO SPORT	impatience
Non-compliant	noncompliance
poor understanding of problem	poor understanding
Wrecklessness	unrealistic goals
external stresses	stress
passive	unrealistic goals
unrealistic	unrealistic goals
lack confidence	Lack trust
Poor listener	noncompliance
previous history of injury to that limb/ joint	negative attitude to injury
Pressure from others	stress
Decreased faith in therapist	Lack trust

Constant Fear (will never get better, career over etc)	anxiety
Don't allow for rest or recovery while injured.....stay trainin etc	unrealistic goals
impatience	impatience
denial	negative attitude to injury
Worried	anxiety
anger	anger
Impatient re: return to sport...go back too early and re injure	impatience
Poor insight	poor understanding
Unrealistic expectations	unrealistic goals
depression	depression
poor motivation	negative attitude to injury
Withdrawal from team activities/lack of involvement in team	depression
Unrealistic goals, may be influenced from other parties (ie coaches, miracle stories of other similar cases)	unrealistic goals
anger	anger
Personality	negative attitude to injury
passively "waiting to get better". patients need to be occupied in the time they would usually be training	negative attitude to injury
Poor compliance	noncompliance
Poor motivation	negative attitude to injury
Depression	depression
frustration	anger
therapy shopping	Lack trust
Poor compliance	noncompliance
Poor compliance with rehab	noncompliance
negative outlook	negative attitude to injury
Non adherence	noncompliance
are an insecure individual	negative attitude to injury
Laziness (expecting physio to do all the work)	noncompliance
fail to take advice and guidance on board	noncompliance
Addictive sports personality	exercise addiction
poor compliance	noncompliance
Poor motivation	negative attitude to injury
anxiety/stress	anxiety
Athletes with pushy coaches who don't understand	stress
unable to listen or follow advice	noncompliance
Frustration	anger
Boredom	negative attitude to injury
Poor self belief in their ability to get back as fit as before	Lack trust
looking for an excuse to give up the sport	negative attitude to injury
impatient	impatience
Inability to set realistic short term goals	unrealistic goals
depression	depression
Poor compliance	noncompliance
anger	anger
unable to rest/relax, prob addicted to exercise	exercise addiction
anger	anger
poor compliance with rehab prescribed	noncompliance
under pressure to reurn too quickly	stress
do not work hard to comply with exs / treatment	noncompliance

stubbornness at accepting advice and education regarding the injury	noncompliance
poor rehab	noncompliance
Lack of motivation	negative attitude to injury
poor treatment compliance	noncompliance
want medication/physio to fix it-not taking responsibility	Lack trust
multiple opinions/ no trust in practioner	Lack trust
unrealistic	unrealistic goals
angry	anger
ill-discipline with rehab program	noncompliance
unable to set achievable medium/long term goals	unrealistic goals
expecting physiotherapist to solve the problem immediately	unrealistic goals
Lazy	noncompliance
feel they know better than therapist	Lack trust
poor exerccise compliance/	noncompliance
Lack of direction/focus	negative attitude to injury
Resuming training /playing too soon	noncompliance
little drive to suceed	depression
stress and anxious behaviour	stress
sensationalist	negative attitude to injury
Poor adherence to rehabilitation program	noncompliance
Anxiety	anxiety
taking advise from too many sources	Lack trust
compliance issues with treatment strategies	noncompliance
Unrealistic expectations	unrealistic goals
lack of understanding of injury	poor understanding
Negative	negative attitude to injury
Want quick fix	unrealistic goals
Fearful	anxiety
Frustration	anger
Low pain threshold	negative attitude to injury
Pressure to play at an amateur level	stress
exercise addiction	exercise addiction
overdoes training/ exercise regimes	noncompliance
not compliant	noncompliance
lack of understanding about cause of injury /healing	poor understanding
lack of self esteem/ motivation	negative attitude to injury
negligent	negative attitude to injury
reluctance to listen to professional advice	noncompliance
pessimistic traits	negative attitude to injury
poor adherance to advice, exercise prescription	noncompliance
poor communicators	negative attitude to injury
impatient	impatience
Arrogance	Lack trust
Poor outlook on injury	negative attitude to injury
mistrust	Lack trust
over analyse	Lack trust
BUSY WORK/SOCIAL LIFE	noncompliance
Impatient	impatience
Disbelief in importance of rehab	poor understanding

fear of recurrence of injury	anxiety
over enthusiastic	impatience
hard on themselves	unrealistic goals
Lack of adaptability to situations	negative attitude to injury
Fear avoidance behaviours	negative attitude to injury
Fear of reinjury	anxiety
athletes with preexisting depression/exercise addiction	exercise addiction
complacency	noncompliance
Panic	anxiety
anxiety	anxiety
Stress	stress
poor listener	noncompliance
off field pressures particularly family with underage players	stress
High severity with low irritability	stress
addiction to exercise	exercise addiction
Intelligence	poor understanding
patient who does not have confidence in their clinician will not do well	Lack trust
anger	anger
unfocused	negative attitude to injury
Negative outlook	negative attitude to injury
Lack of insight into injury	poor understanding
disorganisation	negative attitude to injury
No interest in return to sport	negative attitude to injury
Inability to follow directions	noncompliance
history of regular injury and being out of competition for prolonged periods	negative attitude to injury
Poor social/home support	stress
long history of chronic injuries	negative attitude to injury
Impatience	impatience
depression	depression
Fear of losing their place on starting team	anxiety
poor support network	stress
Anger	anger
Jeopardy of place in team	anxiety
Over training, incapable of resting	exercise addiction
stressed individuals	stress
fearful	anxiety
Too injury focused	negative attitude to injury
push themselves to hard and to early in treatment	noncompliance
Poor conditioning/fitness	unrealistic goals
frustration	anger
under team pressure to play/perform	stress
poor compliance	noncompliance
poor motivation	negative attitude to injury
other life stresses, job etc	stress
think they know more than experts	Lack trust
Not trusting that their therapist is acting in their best interest	Lack trust
Passive attitude to treatment	negative attitude to injury
pressure from coach to return early	stress
external or internal reasons for not getting better other then pure physical	negative attitude to injury

por motivation	negative attitude to injury
non-compliant	noncompliance
competitiveness	impatience
Impatience	impatience
received poor rx outcome/management with physio/medics in past	Lack trust
Unwillingness to get better	negative attitude to injury
Lack of knowledge/understanding of specific injury	poor understanding
over trainer	exercise addiction
depression	depression
Stress from pressure of coach to return to play	stress
Poor attitude	negative attitude to injury
poor relationship with coach / manager	stress
Fear Avoidance	negative attitude to injury
Anxiety	negative attitude to injury
Poor self belief	anxiety
Passive i.e.want phyio to fix them, dont want to help themselves	poor understanding
consumed	depression
Lack of ownership of problem	negative attitude to injury
Poor forward thinking ability (always in the now, can't see the big picture)	unrealistic goals
Difficultly taking instruction / advice / concentration / immaturity	noncompliance
level of sport	stress
intense/fear of losing position	anxiety
lack of trust in health care team	Lack trust
boring exercises	noncompliance
lack understanding	poor understanding
negative attitude	negative attitude to injury
unrealistic expectationsfor outcome	unrealistic goals
affected by pressure from management, big event coming up	stress
dependant attitude	negative attitude to injury
stresser	stress
False expectations	unrealistic goals
Lack of belief/negative thoughts	negative attitude to injury
fatigue	depression
introverted	negative attitude to injury
POOR PRE0INJURY FITNESS LEVEL	negative attitude to injury
Unrealistic expectations	unrealistic goals
Immaturity	unrealistic goals
conflict within a team	stress
individualistic- don't take advice	noncompliance
other stresses in life	stress

	Total	Rank	% Frequency
Non-compliance	82	2	19.57040573
Impatience	39	3	9.307875895
Depression	22	9	5.250596659

Anxiety	30	6	7.159904535
Neg Attitude toward injury	91	1	21.71837709
Anger	20	10	4.77326969
Unrealistic Goals	32	5	7.637231504
Exercise Addiction	16	11	3.818615752
Stress	33	4	7.875894988
Poor understanding of injury	26	8	6.205250597
Lack trust in therapist	28	7	6.682577566
	419		

Question 6: How often do you practise the following psychological skills/techniques when assisting an injured athlete in their recovery from an injury?

Answer Options	Never Use	25% of Time	50% of Time	75% of Time	100% of Time	Rating Average	Response Count
Keeping the athlete involved with the team	1	14	20	40	43	3.93	118
Using short-term goals	0	6	11	22	80	4.48	119
Creating variety in rehab exercises	1	1	18	43	56	4.28	119
Encouraging positive self-thoughts	3	7	21	36	52	4.07	119
Encouraging effective communication skills	6	10	22	30	48	3.90	116
Teaching emotional control strategies	47	35	21	10	4	2.05	117
Using mental rehearsal/visualisation	43	39	16	15	6	2.18	119

Using relaxation techniques	40	47	18	9	5	2.09	119
Teaching muscular relaxation techniques	24	51	21	18	5	2.40	119
Reducing depression	58	36	15	5	3	1.79	117
Improving social support	35	37	21	21	4	2.34	118
Reducing stress or anxiety	9	30	32	28	18	3.14	117
Enhancing self confidence	8	17	31	39	22	3.43	117

Question 8: How important do you feel it would be for you to learn more about the following psychological skills/techniques in order to provide the best possible advice for injured athletes?

Answer Options	Not important	Relatively important	Fairly important	Important	Very important	Rating Average	Response Count
Improving social support for the athlete	4	31	31	38	14	3.23	118
Reducing depression	4	23	26	40	24	3.49	117
Teaching muscular relaxation techniques	7	25	30	38	17	3.28	117
Teaching the use of mental imagery	5	20	29	40	24	3.49	118
Teaching concentration skills	3	22	23	39	31	3.62	118

Using effective communication	2	9	12	35	60	4.20	118
Understanding individual motivation	1	2	7	40	67	4.45	117
Setting realistic goals	1	2	2	25	88	4.67	118
Creating a variety in rehab exercises	1	1	8	37	71	4.49	118
Reducing stress/anxiety	2	8	18	44	46	4.05	118
Teaching emotional control strategies	5	21	35	41	16	3.36	118
Enhancing listening skills of physiotherapist	2	4	14	26	72	4.37	118
Enhancing self-confidence of the injured athlete	1	3	15	42	57	4.28	118
Encouraging positive self-thoughts	1	4	12	41	58	4.30	116
Other (please specify)							4

Appendix 4 SurveyMonkey®™ FAQ

Answer

What is the Rating Average and how is it calculated?

There are two question types that calculate a **Rating Average**:

✓ The Numerical Textbox

✓ The Rating Scale

Numerical Textboxes:

This question only accepts positive, whole numbers as answers. The Response Average for this type is simply the sum of all the answers divided by the number of respondents for that question.

This tells you the average response from the respondents:

[Sum of all Answers] / [Number of Respondents]

Rating Scale:

For this question, the Rating Average is a weighted average per column and row. In this example, each rating scale choice (column header) is by default assigned a value from left to right starting at [1]. You can assign your own weights to each column choice going from 1, 0, - 2 etc. or however you want to establish the scale.

In this example:

- The first rating scale column header choice is valued at 1 (Strongly Disagree - SD)
- The second at 2 (Disagree - D)
- The third at 3 (Neutral - N)
- The fourth at 4 (Agree - A)
- The fifth at 5 (Strongly Agree - SA)

Q1	1 - SD	2 - D	3 - N	4 - A	5 - SA
The food was great.	11% (1)	0% (0)	33% (3)	33% (3)	22% (2)

◆ Part 1: Calculating the Respondent Number with the Column Weight

- In the formula below, the numbers in the parentheses are the weighted values assigned to the columns. The number multiplied with the weighted value is the respondent count or the "frequency" of those that picked that rating:

$$[1*(1) + 0*(2) + 3*(3) + 3*(4) + 2*(5)] = 32$$

- In this example above, we see that the "food was great" row choice had "1" respondent pick **Strongly Disagree**. Since the number of respondents that picked that rating is "1" and the weighted value is assigned a "1", you will see [1*(1)] as the 1st part of the equation.
- Next for the **Disagree** column, you see that "0" respondents picked that answer choice and the column weighting is "2." For this 2nd part of the equation, you see [0*(2)]. This process continues through to the end of the equation for each frequency and for each weighted value.
- After multiplying the weighted values with the actual number of respondents who picked that rating, sum the totals: 32

◆ Part 2: Add the Respondent Totals

Add the respondent totals (or frequency number) of those that picked the ratings.

In this example, it is total of the numbers that are not in parentheses: (1 + 0 + 3 + 3 + 2) = 9

◆ Part 3: Divide the Weighted Value Calculation by the Sum of Respondents

After all parts have been calculated, the formula for the Rating Average would look like:

- $RA = [1*(1) + 0*(2) + 3*(3) + 3*(4) + 2*(5)] / (1 + 0 + 3 + 3 + 2)$
- $RA = 32 / 9$
- $RA = 3.56$

A response rating of 3.56 means that this falls to the right of **Neutral** and closer to the **Agree** rating.

The N/A column is not calculated:

If you choose to use our default N/A option, that column is never factored into the Rating Average equation. Answers collected in the optional **N/A** column are not used in the calculation of the Rating Average. Essentially, the N/A column has a weighted average of [0].