

THE UNIVERSITY OF HULL

Physiotherapy Goal Setting in Anterior Cruciate Ligament Rehabilitation:
An Exploration of Training, Practice and Beliefs.

A PhD Thesis submitted for the University of Hull
Volume 1 of 2

by

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Abstract

Despite the growing interest into the role of physiotherapists providing psychological interventions within anterior cruciate ligament (ACL), literature surrounding goal setting practices within this field is minimal. The main purpose of this research was to explore physiotherapists' approaches, training and beliefs into goal setting practices used within ACL rehabilitation. The thesis consisted of seven chapters, two of which were empirical studies. The empirical chapters aimed to gain further insight into physiotherapists understanding on the psychological aspects of patients following ACL surgery, theoretical knowledge of goal setting, experiences of implementing goals, training received on goal setting and future training needs. Study four involved a UK cross sectional online survey of one hundred and twenty four physiotherapists (N=124). The survey provided an insight of perceptions and goal setting approaches used within ACL rehabilitation. These findings were further explored in study five which involved a UK semi-structured interview study including twenty four physiotherapists (N=24), using an inductive approach. Study five provided a much deeper understanding in to physiotherapist's goal setting practices, training and experiences within ACL rehabilitation and also revealed issues surrounding the initial consultation process. The research findings were conceptualised into a theoretical, innovative goal setting model. The goal of this model is to outline a multi-phase conceptual model of an appropriate ACL rehabilitation goal setting strategy for physiotherapists in an attempt to guide both practice, teaching and research.

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Undertaking a PhD has certainly been a journey of emotions. In addition, I have had a number of extra-curricular challenges. I have given birth to two beautiful children, moved house, started a new job and tied the knot. People who know me know that I certainly don't do things by half measures!

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Chapter 1

Introduction

Chapter 1 - Introduction

1.0 Introduction

Physiotherapists, as suggested the name, are healthcare professionals who are predominantly concerned with optimising the physical functioning of patients (Heaney, Green, Rostron, & Walker, 2012). However, the Chartered Society of Physiotherapy defined physiotherapy as; “a healthcare profession concerned with human function and movement and maximising potential. It uses physical approaches to promote, maintain and restore physical, psychological and social well-being, taking account of variations in health status” (CSP, 2002). To ensure that physiotherapists are using a holistic approach, it is a professional requirement stated by the Health and Care Professionals Council (HCPC) (Standards of Proficiency, Standard 9, item 9.5) that ‘physiotherapists need to set and understand the need to agree goals’ (Anon, 2013).

Goal setting is a psychological motivational tool which appears to be widely taught amongst universities and used in practice by physiotherapists, conversely its effectiveness is questionable (Holliday, Antoun, & Playford, 2005). According to Locke and Latham (1984), a goal is an object or aim that an individual strives to attain. The first scientific approach to goal setting was developed in the early 1900’s by Frederick Taylor. Goal setting was designed as a framework for predicting, explaining and influencing and individuals motivation in the workplace (Locke & Latham 1984). Goals and goal setting are viewed as essential and indispensable components of rehabilitation (Rachel, Barnard, Madeline, Cruice, & Playford, 2010).

Anterior cruciate ligament injuries (ACL) are common in both the sporting population (Schwab Reese, Pittsinger, & Yang, 2012) and the non-sporting population (Joseph, Pathak, Aravinda, & Rajan, 2008). From a return to sport view point, only 65% to 70% of athletes return to their pre-injury level of sports activity following ACL reconstruction.

This poor rate of return was further supported by Kate. Webster, Feller, and Lambros (2008), who reported 50% of athletes do not return to their pre-injury level of sport following ACL surgery, despite being fully rehabilitated. Psychological factors such as anxiety, depression and a fear of re-injury may contribute to this performance disparity (Brand & Nyland, 2009). There are significant cost implications associated with ACL surgery, with an estimated cost of £4500 per patient (including rehabilitation) in the UK (Wilson et al., 2010) adding to the constant financial drain on NHS resources. Therefore the need to investigate potentially cost reducing rehabilitation interventions following ACL surgery is of paramount importance.

There is moderate evidence to support the use of psychological techniques such as imagery, positive self-talk and goal setting in physiotherapy (Tracey, 2008). These techniques have been proven to improve psychological factors such as relaxation, self-efficacy, self-confidence, adherence and anxiety in athletes following ACL rehabilitation (Farouk, 2010; Maddison et al., 2012). Research concerning the psychological aspects of patient care is becoming increasingly recognised within physiotherapy (Heaney, Green, et al., 2012). In support of this, a number of physiotherapists who worked in mental health formed a group called the Association of Chartered Physiotherapists in Mental Health (ACPMH). Nevertheless, the association tended to be more mental health focused such as managing challenging behaviors as opposed to considering psychology practices within physiotherapy treatment. There are however a growing number of areas of physiotherapy where psychological approaches are currently being practiced including; chronic pain, anterior cruciate ligament (ACL) reconstructions, neurology and Sport (Cupal & Brewer, 2001; Schwab Reese et al., 2012). Despite the trend over the past decade to embed psychology within traditional practice, this has not been accepted widely enough by physiotherapists to produce any significant change (Harland & Lavalley, 2003).

This can be demonstrated by examining the extensive list of specialist interest groups within the Chartered Society of Physiotherapy (CSP) and noticing that the initials PIP (Physiotherapists Interested in Psychology) or anything equivalent, are missing (Harland & Lavalley, 2003).

From a curriculum perspective, undergraduate and postgraduate physiotherapy training is said to be inconsistent across the UK (Heaney, Green, et al., 2012). These inconsistencies are associated with insufficient content in certain areas, with limited psychological skills training being the main area of concern (Baddeley & Bithell, 1989). More recently, The National Institute for Health and Clinical Excellence (NICE) and the World Health Organisation (WHO) have called for greater use of the bio-psychosocial model (managing the physical, psychological and social aspects of patient care) to treat patients with low back pain (LBP) within physiotherapy (Sanders, Foster, Bishop, & Ong, 2013). Regardless of the importance of using this model it has unfortunately not been fully implemented (Hunt, 1996). Although this may imply that psychology should form an integral part of the physiotherapy curriculum, this importance has not yet been demonstrated in practice.

1.1 Aims and objectives of the thesis

The central aim of this thesis is to explore UK-based physiotherapists' goal setting practices, training and beliefs within anterior cruciate ligament rehabilitation. The thesis has four main objectives:

1. To investigate on a UK-based level physiotherapists' views and opinions on aspects of the psychological content of ACL rehabilitation.
2. To investigate on a UK-based level physiotherapists' perceptions and opinions of goal setting practices within ACL rehabilitation.
3. To explore on a UK-based level physiotherapists' training and experiences in practicing goal setting within ACL rehabilitation.
4. To investigate on a UK-based level physiotherapists' training needs in goal setting and their preferred method of education.

1.2 Theoretical stance for the thesis

The theoretical perspective underpinning the thesis was based on a pragmatic approach. Pragmatism, suggested by Tashakkori and Creswell (2007), is a deconstructive paradigm that advocates the use of mixed methods in order to establish the truth regarding the research. Scholars investigating the term 'mixed methods' have alluded to the fact there are inconsistencies regarding the meaning of mixed methods. Thus, for clarity, Tashakkori and Creswell (2007) propose that mixed methods are classified when using both qualitative and quantitative research in more than one way. One example of mixed methods would be a thesis that included a focus group study and survey study (thematic and numerical data). Using a pragmatic approach is seen as a perfect philosophical partner in relation to a thesis that incorporates mixed methods as it gains a deeper understanding, while offsetting any weaknesses which are inherent within a single theoretical approach (David, 2014). In addition, the pragmatist researcher is said to be more sensitive to much broader set of considerations such as ethics, morality, historical and political issues within the research process (Giacobbi, Poczwadowski, & Hager, 2005). From a physiotherapist researcher perspective, physiotherapists often use a mixed methods approach in practice when taking subjective information to objectively examining patients function (Shaw, Connelly, & Zecevic, 2010). Therefore the chosen research paradigm advocates the use of quantitative and qualitative lines of enquiry to produce evidence to support best practice (Pinder, Petchey, Shaw, & Carter, 2005).

By underpinning the thesis aims and objectives with a specific philosophical stance, provides more meaningful insight into under researched areas of physiotherapy goal setting practices used within ACL rehabilitation. It is hoped that a specific goal setting model can be created as a result of the research findings to improve the way in which goals are currently being implemented within practice.

Overview of Chapters

1.3 Chapter 1 Introduction

This chapter is an overview of the research. It outlines the importance of goal setting from a professional expectation set by the Chartered Society of Physiotherapy (CSP), the Health and Care Professional Council (HCPC), and its role within the field of anterior cruciate ligament rehabilitation. It highlights potential issues associated with training physiotherapists' receive on goal setting and provides a clear aim, and set of objectives.

1.5 Chapter 2 Autoethnography

The purpose of including an autoethnography chapter was to present a critical self-evaluation of how my personal and professional relationship with goal setting facilitated a constructive line of enquiry. It acknowledges how my past experiences may have influenced the various research processes I have undertaken to complete my PhD thesis. In addition, writing using an evocative style of autoethnography has created an opportunity for me to converse with the scientific literature by incorporating aspects of reflexive writing and identifying key aspects of my experiences that have subsequently been investigated within the thesis. My autoethnography is based on a 360 perspective as it captures my goal setting experiences as a young patient, physiotherapy student, qualified physiotherapist, academic and researcher. The findings reveal some interesting themes which were present in every past experience.

1.6 Chapter 3 Literature Review

This literature review is an exploration of the wider context of the aims of the research. It critically explores the history of physiotherapy as a profession, focusing specifically on how psychological aspects of physiotherapy practice have evolved and how this has been reflected in the physiotherapy training programmes. Included within this chapter is an exploration of ACL rehabilitation and the psychological issues associated within this area of physiotherapy. This chapter provides valuable insight in to whether physiotherapists are provided with an adequate level of training in psychological interventions to meet the challenging demands of ever changing healthcare environment. In addition, it also highlights key areas of goal setting practices within ACL rehabilitation, which facilitated the design of chapter 4.

1.7 Chapter 4 Study 1

This is an exploratory cross-sectional UK survey. The survey was online using Bristol online Survey (BOS) and included one hundred and twenty four UK chartered physiotherapists. The participants ranged from band five to extended scope practitioner status (band eight). The primary aim was to explore physiotherapist's perceptions and opinions of goal setting for patients following ACL surgery. The survey was designed as a result the key areas identified from the literature review and previously published surveys in a relevant field. The survey explored physiotherapists perceptions of psychological symptoms associated with patients following ACL surgery, general opinions on goal setting, purpose of setting goals, benefits and issues with goals and whether they received any training in goal setting. This chapter identified key areas including understanding of the theory that underpins goal setting, practical application of goals, alternative approaches and specific training needs. These areas require deeper

exploration to provide a more detailed understanding in order to identify potential training strategies.

1.8 Chapter 5 Study 2

This chapter employed a semi-structured design using an inductive approach. The study included twenty four participants who were all chartered physiotherapists and worked in three key field (elite sport, NHS and academia). The aim of this study was to further explore specific aspects of the goal setting process which were identified from chapter 4. These aspects included: theoretical understanding of goals, implementation of goal, previous training received in goal setting, training suggestions on goal setting and confidence in using goal setting. The study found that SMART goals was the only approach used by physiotherapists and that their training in goal setting was insufficient. In addition the way in which patients were being managed during their initial consultation following ACL surgery was concerning regarding little patient engagement, not managing expectations and education. These findings have been conceptualised and a proposed goal setting model was discussed in chapter 6.

1.9 Chapter 6 Proposed Goal Setting Model

This chapter is conceptualised from findings of the previous chapters. It is a proposed theoretical goal setting model that is structured in three phases (pre-goal setting phase, implementation phase and goal evaluation phase). Each phase of the model is explained and supported by evidence regarding the relevant psychological theory, professional standards (CSP, 2010), clinical implications and teaching implications. The model is a valuable clinical tool as it provides physiotherapists with a structure to work from, promotes patient centred care and meets expectations from political drivers (CSP, HCPC). This simple, but effective model could also have the potential to be transferable in other disciplines of physiotherapy such as bariatric care, low back pain and cardiac rehabilitation.

1.10 Chapter 7 Conclusion

This chapter is a summary of the thesis. It reviewed and discussed the overall aim/objectives and findings of the thesis. It outlined the next stage of the research process (post-doctoral), specifically on how to empirically validate the model in clinical practice. It suggested that physiotherapists working in other disciplines such as: cardiac rehabilitation, chronic pain and managing the bariatric population of patients may also benefit from incorporating this model.

Chapter 2

An evocative autoethnography

Chapter 2 - My 360 degree goal setting experiences: An evocative autoethnography

2.0 Introduction

I have been working as a physiotherapist for thirteen years. Prior to that, I attended physiotherapy as a patient following an ankle injury. To explore my physiotherapy goal setting experiences from the perspectives of being a patient to working as a qualified physiotherapist, I chose to use autoethnography. Autoethnography is a style of writing that links the personal cultural “placing the self” (Reed-Danny, 1997) within a social context. Although autoethnography has been subjected to a degree of scrutiny over the years regarding its lack of scientific evidence, there are a number of autoethnographic approaches that are widely accepted amongst researchers (Holt, 2003). An evocative approach which brings feelings, images or memories to mind, is a recognised approach. In addition, autoethnography is becoming increasingly popular within qualitative research (Anderson, 2006), in particular graduate and post-doctoral research because it can form the basis of a research method by acting as both a process and a product (Toner, Nelson, Potrac, Gilbourne, & Marshall, 2012). The purpose in writing my autoethnography was to present a critical self-evaluation of my personal and professional journey, as well as acknowledging not only my position within my research but how my experiences may have influenced the various research processes I have undertaken to complete this thesis. In support of this, writing in a reflexive manner enables the researcher to make an explicit recognition that his/her position may affect research outcomes (Berger, 2015). The lens through which this chapter is presented is decidedly post-modern, where an understanding of how my personal and professional relationship with goal setting facilitated a constructive line of enquiry.

2.1 The reality check - March 2004

My first ever patient as a qualified physiotherapist was a 73 year old gentleman who had undergone a total knee replacement. My role was to check he was managing with his knee exercises following surgery. I set the patient some goals, one of which was to independently stand on his operated leg for twenty seconds. The patient agreed and went away to work on his exercises. Two weeks later, the patient returned for a re-assessment. It was clear that the patient had already made some improvements as he was now using only one walking stick instead of the two he needed when I initially saw him. Following a brief re-assessment, the patient demonstrated his ability to stand on his operated leg. It was really rewarding for me to see the patient achieve this task. I sat the patient down and said '(Mr X), I am so pleased that you have achieved your goal. Look, you can now stand on your operated leg for over twenty seconds, how do you feel?' The patient smiled at me, leaned over, put his hand on my knee and said, 'but I still can't get my paper from the shop, pet'.

2.1.1 Shock

I was in a state of shock when the patient expressed his views. At that point, I felt I had completely missed the point; I had clearly set a goal that was meaningless to the patient as it had no personal value. I can't believe I didn't even ask the patient at the beginning of his physiotherapy session what his goal was. Instead, I had over-confidently created something which was important to me. Being a reflective practitioner allowed me to channel this feeling of shock in to positive energy. Therefore, with subsequent patients under my care, I tried to involve them more from the outset. By balancing the relationship dynamics through patient engagement, I discovered details about the patient that I previously would never have known about, if I didn't give them opportunities to give a personal account of their experiences. I was aware that by giving the patient joint ownership of their care, they appeared to be more willing to listen and their adherence to home exercise programmes evidently had improved.

2.1.2 Confusion

Once the initial shock subsided, I felt very confused. I thought being qualified meant that I should have the knowledge and tools to promote a patient's potential regarding movement and function. I recall having a session on goal setting at university, taught by one of the musculoskeletal physiotherapy lecturers. The session introduced SMART goals, which referred to ensuring that all goals were set to be specific, measurable, achievable, realistic and timely. We were taught that it was important to create goals that helped target all the problems that were identified from an assessment. The lecturer provided us with a 'text book' example of using SMART goals, which concerned a patient presenting with reduced knee flexion as a result of a total knee replacement, then the goal would be to achieve full extension within two months. My confusion related to the fact that I thought I was trained to set effective goals. This triggered me to reflect deeply into understanding some of my uncritical past events.

2.2 Initial impressions of physiotherapy January 1994

I was a keen martial artist and at the age of 13 I achieved a first Dan in Taekwondo. I competed for Great Britain in the junior squad. At the time I was training for my 2nd Dan where I distinctly remember producing a very graceful kick, known as a 'Dolgae Chagi', yet landed awkwardly and sustained a lateral ankle sprain. My GP referred me for physiotherapy and I attended my first appointment two weeks later with my mother present because I was only fourteen. I hoped that the physiotherapist could make my ankle better straight away so that I could return to my class as soon as possible. During my first appointment, the physiotherapist directed her question to my mother and asked her what I had done. Following a conversation between the physiotherapist and my mother and a very painful physical assessment the physiotherapist turned to my mother, and informed her about my grade two lateral ankle sprain. Towards the end of my appointment, the physiotherapist spoke to me for the first time and said, 'I am going to give you some exercises and your goal is to do your exercises twice a day'. A couple of

weeks later I returned to see the physiotherapist who reassessed my ankle and felt I had achieved the goals she set for me. I was immediately discharged from physiotherapy, but it was an additional three months of self-management, which consisted of riding my bike before my ankle regained sufficient stability and confidence to resume my training.

2.2.1 Fear

My physiotherapist employed a serious approach and her style of communication was somewhat condescending. To me as a teenager, her presence appeared intimidating. I felt very anxious as I had no idea what was expected of me or what the physiotherapist was going to do. I remember feeling in fear following my assessment, because to me, the physiotherapist initially made my pain worse with no explanation. Instead of discussing this with my mother, I started to internalise the fear and developed kinesiophobia, the fear of movement. This made it difficult to strengthen my ankle to a level that would allow me to perform safely.

2.2.2 Frustration

I felt quite indignant that the physiotherapist was not interested in my feelings, beliefs or desires. The level of frustration was intolerable due to not having been given any opportunity to ask questions. These were very meaningful issues to me, such as when I could return to my martial arts and whether it was normal to feel the level of pain I was experiencing. My path towards achieving my goal had been blocked due to not being involved or feeling listened to.

2.3 Physiotherapy Training January 2000

As a student physiotherapist, I was assigned a number of clinical placements which were NHS based. Once, on placement, I asked my educator how I could make a patient's goals SMART when the patient's goal was to gain more confidence in their knee when placing their weight through it. My educator threatened to fail me because I was not setting goals effectively. Having taken a moment to consider the consequences of potentially failing a placement, I went back to the patient and said, 'I appreciate you want to have more confidence in your knee, but I think we should look at setting a goal to help you straighten your knee'. This physiotherapist mandated approach appeared to be the only strategy used amongst physiotherapists in the department.

2.3.1 Ignorance

The more I used SMART goals on placement the more I started to believe in the approach and felt I had been unwise in the first instance to question its effectiveness. As I started to become more confident using SMART towards the end of my degree, I felt that I was beginning to be quite efficient at setting goals. The repeated cycle of these positive affirmations of setting SMART goals and seeing measurable differences in range of movement and strength furthered my belief in this approach.

2.4 Revolving doors August 2010

One of my first roles as an academic in a teaching capacity was to assist a Senior Lecturer with a session on goal setting. At this point, I had completed an MSc in Sports Physiotherapy which provided me the much needed exposure and some underpinning theory in the field of psychology. The session I was assisting had run successfully for the past five years. Indeed the Senior lecturer exclaimed, 'I am surprised you are wanting to meet about the goal setting lecture, as it is probably one of the easiest and most straight forward lectures within the module'.

On the day of the class, the lecturer said to me, 'just observe as I feel there is probably nothing for you to contribute to'. Soon the lecture theatre was full with approximately one hundred physiotherapy students. The lecturer literally read from the slides and towards the end of the session, a student in the audience put his hand up and asked a question: 'How would SMART goals work if, from a trans-theoretical model perspective, the patient was at the pre-contemplation stage?' Following an awkward silence, the lecturer said, 'look if you want to become a physiotherapist, you need to use SMART goals or you won't succeed'. The class on goal setting was over.

2.4.1 Confidence

Having more knowledge in goal setting meant that I actually felt less confident due to knowing more about its complexity. I went from feeling extremely confident to feeling completely out of my depth regarding all aspects of goal setting, including the meaning of goals and how best to implement them. Because I was a new member of staff and also new to academia, I did not have the confidence to question a Senior Lecturer about the session. Instead, I felt in some ways like a teaching assistant where I was present to assist with the session, but would not have the knowledge or authority to answer any related questions.

2.4.2 Anger

Once again, I felt angry. This time that a colleague appeared to question my understanding of goal setting and that in his eyes, I was probably wasting valuable preparation time on meaningless details. I thought that goal setting was going to be taught over a number of sessions due to its complexity of this motivational tool and the volume of information we would need to include. I was angry that the information delivered felt inadequate. The anger I felt when a student who was brave to ask a relevant question was given a dressing

down. It was another example to me that valid questions of physiotherapy practice were not being given an appropriate platform. This experience immediately made me reflect regarding the teaching and learning strategies that I employ and luckily, I tended to use an interactive approach where the dialogue between the students and myself hopes to encourage students to hypothesise and speculate thoughts in confidence.

2.5 Future considerations as a researcher

Writing this evocative autoethnography has enabled me to draw on the energy from these reflective processes and use these as a conduit to explore within the scientific literature. Presenting my past experiences in this format, has highlighted a theme which was not being listened to through the different situations. This clear but concerning theme has created an opportunity to frame my experiences more deeply in the literature. (L. Anderson, 2006) observed, identifying a theme from a personal journal, could potentially inform clinical practice and future research.

On reflection the training I received in goal setting as a student did not provide me with the underpinning knowledge and practical application that was with hindsight, desperately required at the time. Considering I was confident enough to question my clinical educator during one placement about whether using SMART goals were appropriate revealed the strength of my own motivation and emotions associated with goal setting (Laslett et al., 1999). In addition, using this holistic process of enquiry provided me with more social and cultural insights in to the physiotherapy as a profession compared to other scientific methods of enquiry (Atkinson & Delamont, 2006). The fact my question regarding the suitability of a goal setting approach may have been perceived as a threat, subsequently implying a training issue. Not being involved as a patient or not

made to feel valued does not frame itself within a patient/practitioner model. Understanding relevant psychological models when implementing goals may facilitate the physiotherapist to not only place the patient in the centre of all decisions that are made, but to use the most appropriate strategy (Jensen & Lorish, 1994). The literature further shows that physiotherapists perceive themselves as being competent at setting goals (Lafferty, 2008); however there is evidence that physiotherapists would welcome further training in using psychological tools with goal setting being identified as one of those tools (Alexanders, Perry, & Douglas, 2016). Re-visiting a personal experience from a reflexive and reflective standpoint may act as a new site to which new possibilities can be explored (Toner et al., 2012), for example introducing alternative approaches to goal setting and exploring the most effective method to implement goals. Reflecting upon the emotions that I experienced with goal setting, has created a research interest to further explore practices within physiotherapy.

2.6 Conclusion

Re-evaluating my past has enabled me to reflect through a critical lens upon situations that were never questioned. Despite the fact goal setting practices have continued to evolve over the past decades (Locke & Latham, 2013), it would appear that goal setting practices used in physiotherapy may not have evolved enough. This autoethnography has allowed me to connect my personal relationship with the profession and retrieve insightful aspects of goal setting practices that would benefit from being explored using scientific methods of enquiry. The benefits of having initially used a pseudo-scientific approach is that this approach allows depths and interpretations of feelings and emotions that science would not be able to reach. One example of this was exploring my reflections following my 360 degree autoethnography and highlighting potential research questions as a result

of deep consideration. However, the concept of authenticity is somewhat challenged when writing autoethnographies (Lovell, 2005). In addition, personal impressions and thoughts are not seen as important from a scientific perspective (Ottenberg, 1990). Just because autoethnography does not adhere to traditional notions of objectivity, writing in an autoethnographical manner allows my experiences to be described and comprehended in different ways. The next stage would be to conduct a comprehensive literature review exploring goal setting practices within physiotherapy. The process of critically evaluating the literature will hopefully help identify research questions that will need to be further examined.

Chapter 3

Literature Review

Chapter 3 - Literature Review

An Exploration of Psychology within Physiotherapy Practice

3.0 Introduction

A number of electronic databases were used as part of the search strategy. Eligible papers were identified through a rigorous search of CINAL, AMED, MEDLINE, PsychINFO and EMBASE. In addition, hand searches of journal related content was conducted. Due to the historical exploration of this literature review, no time limits were applied to the searches therefore journal articles were retrieved from as far back as 1894.

3.1 Overview of a Physiotherapist

According to the Chartered Society of Physiotherapy (CSP), physiotherapy's professional, educational and trade union body, physiotherapy is a science-based profession that takes a "whole person" approach to health and wellbeing, including the patient's general lifestyle (CSP, 2013). Physiotherapists are known to utilise a broad range of techniques ranging from manipulation and massage techniques to exercise therapy and acupuncture (CSP, 1998). Furthermore, they work with electro-physical agents and computer-based equipment such as interferential and diagnostic ultrasound (CSP, 1998). Although physiotherapists are predominantly known for their hands on skills, evidence from quantitative and qualitative data demonstrates that a growing number of physiotherapists are using a range of psychological techniques in practice. These techniques have been reported to be relaxation, positive self-talk, imagery and goal setting (Cupal & Brewer, 2001; Schwab Reese et al., 2012). From a goal setting perspective, it is a professional requirement stated by the Health and Care Professionals Council (HCPC) (Standards of

Proficiency, Standard 9, item 9.5) that ‘physiotherapists need to set and understand the need to agree goals’ (Anon, 2013).

3.2 Introduction to Anterior Cruciate Ligament Rehabilitation

The Anterior Cruciate Ligament (ACL) is an intra-articular ligament within the knee joint (Nakamura, 2018). It arises from the posteromedial corner of medial aspect of lateral femoral condyle in the intercondylar notch and runs inferiorly, medially, anteriorly attaching on to the inter-condyloid eminence of the tibia (Tashiro et al., 2018). The fibers of the ACL are arranged in two components, the smaller anteromedial bundle (AMB) and the larger posterolateral bundle (PLB), named according to where the bundles insert into the tibial plateau (Koch et al., 2018). The ACL is innervated from the posterior articular branches of the tibial nerve and is vascularized by both the lateral and medial geniculate artery (Colombet, 2018). From an arthrokinematic stand point, the ACL’s role within the knee is dependent upon the fiber arrangement. For instance, the anteromedial bundle is tight in flexion and the posterolateral bundle is tight in extension. In extension both bundles are parallel; in flexion the femoral insertion site of the posterolateral bundle moves anteriorly, both bundles are crossed, the anteromedial bundle tightens and the posterolateral bundle loosens (Koch et al., 2018). Functionally, the ACL has a major role in minimising anterior translation of the tibia and preventing excessive medial and lateral rotation of the tibia as well as optimising proprioceptive control of the knee (Cook et al., 2018). Although the ACL has a number of important roles preserving joint integrity of the knee complex, the combination of the anatomy and arthrokinematics of the ACL also makes it very susceptible to becoming injured (Setuain, Bencke, Alfaro-Adrián, & Izquierdo, 2018).

ACL injuries occur in 70-80 injuries per 100000 people a year in the general population (Grindem, Arundale, & Ardern, 2018). A recent systematic review with meta analysis study investigating incidence and prevalence rates of ACL injuries reported that out of their fifty eight articles included, 1 out of 29 female athletes and 1 out of 50 male athletes sustain ACL ruptures within a season (Montalvo et al., 2018). The incidence rates of amateur male and female athletes were higher by two percent inferring that level of training, medical and science support strategies may be a contributing factor to this. This was corroborated by Hägglund, Waldén, Bengtsson, and Ekstrand (2018), who compared football training strategies of professional versus amateur and reported significant differences in training and support. For example, professional football clubs involved more frequent match type training sessions, regular medical support (sports massage, physiotherapy) compared to amateur clubs who typically trained twice a week with one match day a week. These claims may be somewhat cursory due to recent evidence demonstrating that the majority of professional sports incorporating specific prevention training interventions as part of their weekly training (Harris, Anderson, & Surgeons, 2018). It is clear within both scholarly and research activity that ACL injuries are more prevalent in females than males. Reasons have been related to muscle activation patterns, neuromuscular arthrokinematic differences (altered Q angle, risk factors of the female triad) (Bencke, Aagaard, & Zebis, 2018). The biochemical explanation for these changes is most likely related to the increased levels of relaxin and the estrogen-mediated reduction in procollagen I resulting in altered ligamentous tensile properties (Anderson, Browning, Urband, Kluczynski, & Bisson, 2016).

Other risk factors associated with ACL injuries are the type of sporting movements. Øiestad, Holm, and Risberg (2018) investigated ACL incidence rates with sports that include numerous pivoting movements and identified sports including football, rugby, netball, basketball, hockey incorporated frequent pivotal actions, thus increasing ACL

tension and transverse forces. Other intrinsic related movements such as acceleration followed by rapid deceleration sporting movements place extreme tibial shearing forces, thus increasing undue stress on the ACL complex (Sasaki, Koga, Krosshaug, Kaneko, & Fukubayashi, 2018). However Peel, Schroeder, Sievert, and Weinhandl (2018) investigated the role the adductors on reducing tibial shearing during decelerated movements and stated that increasing the strength of the adductor group should be incorporated into athletic strength and conditioning training strategies as a risk reducing potential for ACL trauma. This would suggest that due to the number of intrinsic sporting related risk factors associated with ACL trauma, using an evidence based training regime incorporating appropriate prevention, strength and training drills may be a potential cost reducing strategy when compared to the cost involved following ACL injury surgery and rehabilitaton.

ACL injuries associated with the sporting population appear to dominate the literature from a healthcare perspective, however, ACL injuries are also common in the non-sporting population. Patients who don't partake in sporting activities are considered to be at less risk of sustaining ACL injury, but can still sustain both intrinsic (rotational, deceleration, landing stresses) and trauma based (road traffic collisions, pedestrian injuries and occupational realted injuries) (Sharma, Joshi, Philip, & Kaushal, 2017). A large scale American occupational survallience study investigating the number of lower limb injuries occuring in the workplace recorded over 184,000 knee injuries including ACL trauma (Chen et al., 2013). These mechanisim of injury were associated with a combined loaded, flexed and rotated knee movement. This study had limited demographic information where it was not able to identify those who sustained ACL trauma did not partake in any sporting activities. Nevertheless, it highlights the importance that physiotherapists working with patients following ACL injury may also be working with patients who do not typically follow a sporting/active background.

There is a substantial amount of empirical research investigating the surgical management of ACL injuries. A recent systematic review by Anderson et al. (2016) critically synthesised a large range of past systematic reviews from over the past decade which involved all aspects of ACL management including diagnosis, surgery, rehabilitation and conservative management. The study reported that from a clinical diagnosis perspective, the Lachmans and MRI are still the most sensitive diagnostic tools. This statement was also substantiated by Aoyama, Lowe, Capraro, and Wells (2018) who investigated clinical accuracy rates on cadaver subjects. However this study did have one limitation in that not performing clinical tests on living human beings would not encounter any muscular guarding that typically occurs when performing such tests, which may reduce sensitivity rates and overall accuracy. Because ACL injuries vary regarding degree of trauma, single trauma versus multiple soft tissue trauma, degenerative changes versus immature skeletal trauma, it was difficult for Anderson et al. (2016) to confidently specify whether non-operative versus conservative management was the most appropriate. However, surgical approaches did show to have greater positive functional and patient satisfaction outcome results compared to non-operative approaches. In contrast, Wellsandt, Failla, Axe, and Snyder-Mackler (2018) investigated the longevity of non-operative versus operated outcomes in ACL tears and revealed that patients who were treated conservatively experienced frequent knee joint effusion 5 years post injury, whereas patients following ACL surgery reported to have functional restrictions regarding knee extension. These mixed findings may warrant a careful designed clinical ACL algorithm so that each patient who has torn their ACL ligament is considered on an individual basis. Creating a specific ACL algorithm that includes a pathway for patients who are from a non-sporting background may optimise outcomes and reduce miss diagnosis. This was supported by Joseph et al. (2008) postulating that many non-athlete

ACL injuries are either missed initially or managed conservatively due to the treating physician presuming that non-athletes do not have a significant degree of instability.

Rehabilitation for patients sustaining ACL ruptures have been extensively researched over a number of decades. A recent large scale systematic review by van Melick et al. (2016) systematically reviewed articles from 1990 to 2015 that provided specific rehabilitation exercise guidelines for ACL. The reports demonstrated that exercise rehabilitation showed no difference regarding performance whether the patient conducted this in the rehabilitation environment versus the patient's home environment. However this study did not discuss the issues associated with adherence and compliance to home rehabilitation. Bachmann, Oesch, and Bachmann (2018) revealed that patients who have higher levels of emotional symptoms including depression, anxiety and fear tended to struggle with self-directed home exercise programs as opposed to patients who presented with high levels of self-efficacy and who were self-determined. Creating a balance of prescribing home based exercises but with regular telehealth support strategies may provide a positive step towards reducing adherence issues in patients following home exercise programs.

The subject concerning open chain exercises (e.g. leg extension with no distal support) versus closed chain (e.g. standing squat, lunge) exercises within ACL rehabilitation continues to be debated. Anderson et al. (2016) and van Melick et al. (2016) investigated these types of exercises and both concluded that open and closed chain were effective in regaining sufficient quads function, but open chain exercises from a safety perspective should be introduced 4 weeks post ACL surgery due to the strength of the graft site. The aforementioned was supported by Heckmann, Noyes, and Barber-Westin (2018), however it is important to monitor the patellofemoral joint for any swelling, crepitus and stiffness which could inhibit rehabilitation progression. Other exercises advised were

neuromuscular training (isometric quads) and weight bearing exercises. This once again echoes the importance that patients need to be monitored both physically and psychologically throughout the rehabilitation process.

Patients who undergo ACL reconstructive surgery not only experience physical problems, for example, reduced range of movement, reduced muscle strength and reduced function (Thomee et al., 2006), but significant psychological symptoms and a negative psychological state (Webster, Nagelli, Hewett, & Feller, 2018). Ardern, Taylor, Feller, Whitehead, and Webster (2013) reported that up to two-thirds of athletes may not return to their pre-injury level of sport by 12 months after ACL reconstruction surgery, despite being physically recovered. This implies that psychological factors may have an important role in athlete return to play, hence integrating psychological interventions into physiotherapy rehabilitation programmes could prove extremely valuable. In support of this Joanna Kvist, Ek, Sporrstedt, and Good (2005) found that some athletes make decisions not to return to sport following injury or ACL reconstruction. These decisions were largely due to psychological hindrances, with fear of re-injury namely one of those reasons.

A number of evidence higher than cross sectional studies identified a number of common psychological symptoms associated with ACL injury. These are; fear of reinjury, anxiety, low mood and confidence (Ardern, Grindem, Kvist, Waldén, & Hägglund, 2018; Noyes & Barber-Westin, 2018). There is recent evidence within the sports psychology literature providing explanations for these associated psychological symptoms. For instance, fear of re-injury according to Burland et al. (2018) may be related to patients becoming more conscious and aware of the mechanism in which they sustained their injury, whereas Meierbachtol, Yungtum, Paur, Bottoms, and Chmielewski (2018) correlated patient fears following the resumption of sports specific drills. Despite these findings providing insight

in relation to explanations of psychological symptoms, both studies used very different methodologies. Burland et al. (2018) used an interview based study using twelve participants and analysed the data set using an inductive approach, whereas Meierbachtol et al. (2018) used a retrospective cohort study involving twenty one participants and statistical analysis to quantify the findings. Considering these studies involved varying methodologies, the conclusions drawn corresponded with one another.

Empirical evidence exploring possible explanations for anxiety and low mood revealed that patients following ACL surgery may encounter peer pressure from sporting personnel (coaches, players) and also from family members and loved ones concerning return to sport and function therefore elevating ones anxiety (Webster et al., 2018). Low mood is said to be interrelated to the persons thoughts about his/her independence of their future, basic needs of providing to their family members and not actually returning to pre-injury level of sport and function (Zarzycki, Failla, Capin, & Snyder-Mackler, 2018). A recent extended literature review by Wu, Liu, Dines, Kelly, and Carcia (2018) reported that there are some cases where patients following ACL surgery experience major depressive symptoms and psychiatric symptoms such as suicidal ideations, extreme catastrophizing. These cases were associated with patients who already have an existing mental health history and have sustained an ACL injury, exacerbating their symptoms. This study highlighted the importance of appropriate screening tools and a comprehensive subjective assessment to aid as a predictor for appropriate mental health referral. Although this study was deemed as a low strength of evidence study, it can however be assumed from these findings that ensuring that a patient care approach should be used to help identify any patients that may require immediate referral. Such injuries often lead between six to nine months of time out from sport and work, subsequently contributing to negative mood and emotions (Sugimoto, Heyworth, Davis, Kocher, & Micheli, 2018). Considering the

average cost in the UK for a patient to undergo ACL surgery and rehabilitation is £4500 pounds (Anon, 2015a), the cost in treating patients with mental health related issues (depression, anxiety etc) is an approximate annual cost of 43 billion a year in the United States (Wu et al., 2018). Therefore the need to research potential cost reducing intervention strategies within ACL rehabilitation is critically important.

It is clearly evident within the sports medicine and clinical literature that patients following ACL surgery initially receive a comprehensive physical assessment, which includes active, and functional ranges, muscular strength, special tests and outcome measures (DiFabio et al., 2018). In addition, some physiotherapists may incorporate self-reporting outcomes as this enables patients to contribute their perspectives to facilitate a more collaborative approach (Davis & Bryan, 2015). There are a number of self-reported outcome measures (but not limited to); the Measure Yourself Medical Outcome Patient Scale (MYMOP), SF36 and Knee Injury and Osteoarthritis Outcome Score (KOOS) (Boer, Hoogslag, Brouwer, Demmer, & Huis, 2018). Although these outcome measurements provide the physiotherapists with a general understanding of the patients perceived level of self-efficacy, very few physiotherapists incorporate this in their practice (Wagstaff, 2006). The debate regarding the effectiveness of using self-reported measures continues to rise. Greenhalgh, Long, and Flynn (2005), postulates that because the answers are often vague e.g. somewhat difficult, very difficult, not difficult etc, these answers give clinicians little or no guidance when making clinically related decisions. A recent retrospective cohort study by Nagai et al. (2018) involved 43 patients following ACL surgery investigating knee extension issues with self-reported outcome scores. All patients had an extension deficit were then asked to complete a patient reported outcome tool. The results indicated that despite the patients not being able to achieve full knee

extension, this was not documented within the reported outcome tools questioning the efficacy of using such tools. From a hospital discharge view point, self-reported outcomes are clinically useful when discharge planning as it provides a clinical justification of the treatment interventions used on the patient (Rosner, Gottlieb, & Anderson, 2018). This may infer that the latter reason for using self-reported outcomes may not be framed within a patient centred approach. Correspondingly, a study by (Ackermans et al., 2018) investigated whether self-reported outcome measurement improved patient empowerment even when patients received feedback from their clinicians on completing their outcomes. The results revealed that patients who completed patient reported outcome measurements had little influence on helping them feel more empowered and the use of more psychological related interventions e.g. counselling may be much meaningful and satisfying approach for patients. Although it is apparent that there is a societal shift in facilitating a more patient informatics approach to healthcare and this can be demonstrated by the increasing usage of patient self-reported outcomes. The effectiveness however remains to be deeply debated within the research. To truly provide patients with a voice that is heard amongst clinicians, research examining the efficacy of patients being involved in the actual design of a self-reported outcome measure may allow these outcomes to be more patient friendly and patient centred.

There appears to be a paucity of literature regarding initial psychological or psychometric testing prior to commencing rehabilitation (Wu et al., 2018), which is of a concern given the fact a significant number of patients do not successfully return to their pre-injury of sport (Ardern, Taylor, Feller, Whitehead, & Webster, 2013); Lepley, Pietrosimone, and Cormier (2018), conducted a laboratory study involving 20 patients and used a variety of outcome measures both physical e.g. quads and neuromuscular testing and emotional repose to ACL injury inventories. The results revealed that using emotional/psychological

based outcome measures prior to the commencement of rehabilitation may be a useful predictor of rehabilitation barriers and psychological outcomes. The limitations highlighted in this study may have been associated with the insufficient sample size, which reduces the power of the study and may increase the margin of error, subsequently rendering the study. The merits of this study were noted from the clinical benefits of screening patient's general psychological state prior to any rehabilitation intervention. This was further substantiated by a well-known study by Ardern et al. (2013), who conducted a case control study (level 3 evidence) involving 187 athletes to determine their level of psychological predictors in order to return to sport. The results reports that clinical screening for possible maladaptive psychological response in athletes pre and post-surgery may help identify potential risk factors of not returning to sport. The aforementioned only focused on a sporting population suggesting that further research not only using an appropriate statistical power may provide more substantial evidence to support the importance of incorporating psychological screening tools on both the sporting an non-sporting population of people as part of traditional physiotherapy clinical assessment.

From a return to sport (RTS) perspective, the criteria physiotherapists use to determine whether athletes are safe to return to sport varies within the literature. Typically RTS criteria involves a 'battery of tests' including physical related e.g. single leg hop test, star excursion, one rep max (Webster & Feller, 2018). There is a growing amount of literature advocating the use of psychological readiness assessment tools to assist patients to return to sport (Ardern, Webster, Taylor, & Feller, 2011; Blakeney et al., 2018). A psychological screening tool which is pertinent to patients following ACL rehabilitation is the Anterior Cruciate Ligament-Return to Sport after Injury Scale (ACL-RSI) (Grindem et al., 2018; Zarzycki, 2018). This tool consists of 12 questions which have

numerical value and is currently being used world-wide (Chen et al., 2017). Other reported psychological screening tools that are used during ACL rehabilitation is the Tampa Scale of Kinesophobia-11 (TSK-11) (Rambaud et al., 2017). This is a 17 item questionnaire that measures fear of movement and potential fear of re-injury (Chen et al., 2017). The draw backs to the ACL-RSI tool is that all of the questions are associated with sports performers, therefore this is not transferable for the general population of patients who do not play sport. However the TSK-11 tool is generically worded, so this could be applicable for both the sporting and non-sporting population. Webster et al. (2018) conducted a large cross-sectional study involving 635 athletes (389 males, 246 females) and used a psychological screening tools (including TSK-11 and ACL-RSI) to determine athlete's readiness to return rates. The results reported that the male athletes demonstrated much higher psychological readiness states compared to female athletes who demonstrated a more negative outlook. These findings highlight the need for more psychological support strategies to ensure that females return to sport rates are optimised. The aforementioned does suggest that non-sporting patients following ACL surgery needs to be given much more consideration regarding appropriate screening tools for sedentary lifestyles, exercises for health improvements and not sports related drills and more holistic support to continue to maintain sufficient knee stability. Despite these tools being readily available to be implemented, very few physiotherapists incorporate this in their practice (Wagstaff, 2006).

Using readiness return to sport tools and return to sport functional criteria may help assist the physiotherapist make vital clinical decisions, there are other psychosocial factors that may occur despite the efforts of using such tools. Burland et al. (2018) conducted a qualitative study involving 12 participants using semi-structured interviews and an inductive approach. The study aimed to explore psychosocial factors following ACL

surgery. The results revealed distinct themes including having a strong support system, expectations and assumptions regarding rehabilitation and self-awareness causing patients to reprioritise their entire life/social circumstance. The findings suggest that these psychosocial factors irrespective of any psychological screening tools being used are more related to the patient/practitioner relationship. From a transferability stand point, the population was limited to the sporting population and the stages of analysis could have been more clearly explained, thus lowering the study's trustworthiness. This point was echoed by Ardern, Grindem, Kvist, Waldén, and Hägglund (2018), who investigated ACL rehabilitation within handball players and stated that building the players confidence, supporting and elevating players motivational status may reduce any negative psychosocial issues. Again, both studies focused on athletes with little regard to the non-sporting population of patients who undergo ACL surgery and rehabilitation. This calls for more research to be conducted on the general public following ACL reconstruction in relation to non-sport support strategies, psychological screening tools and biomechanical return to work testing.

Evidence to support the use of psychological techniques within ACL rehabilitation such as imagery, positive self-talk and goal setting is continuing to rise (Szeverenyi, 2018). These techniques have been proven to improve psychological factors such as relaxation, self-efficacy, self-confidence, adherence and anxiety in athletes following ACL rehabilitation (Farouk, 2010; Maddison et al., 2012). Using psychological techniques within physiotherapy practice has also been shown to improve physiological and physical outcomes such as knee laxity and neurobiological levels (adrenaline, noradrenaline and dopamine) (Farouk, 2010), which subsequently can positively influence injury recovery. Using psychological techniques such as imagery to help alter the perception of pain has shown to physiologically reduce oedema resulting in improved function following a study

by Christakou and Zervas (2007), who investigated the physiological effects of using imagery on athletes with a grade II ankle sprain. Psychological interventions, in particular guided imagery strategies have also been beneficial to increase patient adherence to prescribed exercise programmes (Scherzer et al., 2001). There appears to be a degree of controversy surrounding the actual effects of psychological interventions in relation to improving patient outcomes within ACL rehabilitation. Coronado et al. (2018), examined the role of psychosocial interventions using a systematic review which included 4 articles. The articles included were of high strengths of evidence (RCT) and included a range of psychological interventions including imagery, relaxation and coping modelling strategies. The results reported very little evidence to support the efficacy of functional improvements and patient outcomes using psychosocial interventions. Although this study used the PEDro quality assessment tool, articles were included if they scored higher than 5 out of the 10 questions. Hariohm, Prakash, and Saravankumar (2015), advocates including articles which have a score of 9 and above as this is classified as ‘excellent’ methodological quality and 6-8 being ‘good’ methodological quality. Given that the articles were included with a score of 5 and above questions its overall methodological quality, therefore these results should be considered with a degree of caution.

More recently, there is evidence suggesting that instead of using specific psychological interventions, imagery, relaxation etc, within ACL and other lower limb injury rehabilitation, using more general psychological models of health has been effective in improving patient’s rehabilitation outcomes. Conley et al. (2018), conducted an extensive review of the literature examining specific and general psychosocial approaches to ACL and injury rehabilitation. The findings suggest that using appropriate psychological models, in this instance the Health Belief Model factors the individual beliefs, expectations when making a health/clinical decision as well as providing the clinician

with a theoretical framework to facilitate an individual rehabilitation programme, thus promoting patient centeredness.

Understanding the psychological differences amongst patients following ACL surgery is a suggested approach by Everhart, Best, and Flanigan (2015), who conducted a systematic review of psychosocial predictors following ACL surgery. A total of 8 studies were included and were screened using the modified Coleman score. The results revealed that psychological factors are predictive of ACL rehabilitation outcomes and factors such as self-confidence, self-motivation were consistent with the theory of self-efficacy, whereas social support, and athletic identity were consistent with various social theories. Symptoms that were not predictive of functional outcomes were knee pain and kinesiophobia. These last two factors have been shown to significantly reduce through the use of sufficient education and reassurance from the clinician (Beneciuk, George, & Jones, 2019). Despite these differing approaches, very few physiotherapists feel confident to use such interventions (Alexanders, Anderson, & Henderson, 2015; Jevon & Johnston, 2003; Rodriguez, Marroquin, & Cosby, 2018). Future research investigating strategies to enable physiotherapists to overcome competency and confident issues from using psychological approaches may enhance patient's self-efficacy and adherence to rehabilitation. The literature demonstrates that research has established a growing interest into the role of physiotherapists providing psychological support to patients within a sport rehabilitation setting (Ardern et al., 2018; Ardern et al., 2013); however very little research exists for patients following ACL reconstruction. A study by Arvinen-Barrow, Penny, Hemmings, and Corr (2010b) investigated physiotherapists' personal experiences of using psychological intervention techniques as part of sport injury rehabilitation. Participants reported being knowledgeable and comfortable using motivational techniques such as goal setting, but lacked training in other techniques such as imagery

and positive self-talk. Despite physiotherapists commonly using goal setting techniques with athletes, their approach and/or understanding of goal setting is questionable. Heaney, Green, et al. (2012) undertook a qualitative study investigating the psychology content of UK physiotherapy education and patient satisfaction and reported patients felt that the goals being set were not patient or psychologically-focused. In addition, they felt goals were largely objective related as opposed to function. In addition, Arvinen-Barrow, Hemmings, Becker, and Booth (2008) found that goal setting was physiotherapist-mandated and not patient focused. Although research demonstrates an unequivocal role for physiotherapists and other practitioners in using psychological methods to support injured athletes (Beneciuk et al., 2019), physiotherapists are rarely aware of the underpinning theoretical models of psychology on which such psychological models are based (Jevon & Johnston, 2003). Understanding these models may help physiotherapists to adapt and implement psychological interventions more effectively in sporting environments; hence further training in psychology may be beneficial for physiotherapists working in sport. This would largely indicate a disparity between the scientific evidence to support the use of psychological interventions and actual level of training provided in undergraduate physiotherapy programmes. In support of this, it is clearly reported that physiotherapists do not feel adequately trained to deliver psychological interventions especially when working in the sporting environment and would welcome further training in this field (Ford & Gordon, 1997; Hemmings & Povey, 2002).

3.3 Introduction to Goal Setting

Goal setting is a motivational tool and the first scientific approach to goal setting was developed in the early 1900's by Frederick Taylor. Goal setting was designed as a framework for predicting, explaining and influencing and individuals motivation in the workplace (Locke & Latham 1984). Motivation is defined as the reason for people's

actions, desires and needs (Elliott & Dweck, 1988). Furthermore, motivation is related to why people decide to repeat a particular behaviour, or their personal direction towards a behaviour (Elliot, Gable, & Mapes, 2006). There are numerous theories that are associated with motivation, thus to name a few: cognitive (goal setting theory, self-determination theory- Deci and Ryan), social theory (Bandura) and psychological theory (Gollwitzer), all of which are discussed within this chapter. According to Locke and Latham (1984), a goal is an object or aim that an individual strives to attain. Goal attainment was successfully in the workplace and in industrial and organisational literature. This lead to calls to apply goal setting strategies in other areas, such as the sports and healthcare (Locke, 1985). According to Lunenburg (2011), it is important on how the goal is set and how this is likely for patients to achieve the goal. To achieve goals, they must be specific, challenging and be based on realistic timescales (Lunenburg, 2011). Setting such achievable goals appears to lead to higher performance (Locke & Latham, 2006).

3.3.1 Goal setting approaches used in healthcare

Goals and goal setting are viewed as essential and indispensable components of rehabilitation (Rachel A Barnard et al., 2010). In addition, it is a professional requirement stated by the Health and Care Professionals Council (HCPC) (Standards of Proficiency, Standard 9, item 9.5) that ‘physiotherapists need to set and understand the need to agree goals’ (Anon, 2013). However, to work in the best interest of the patient, one challenge of the physiotherapist during the goal setting process is to translate their technical knowledge and clinical experience into strategies which are meaningful to the patient (Trede, 2012). A starting point according to Lord, Wade, and Halligan (1998), is for physiotherapists to understand the difference between a treatment goal and a patient centred goal. A patient centred goal is a goal that reflects the needs of the patient (Lord

et al., 1998) and a treatment goal is something that is based on the cause of the problems identified on assessment (Leach, Cornwell, Fleming, & Haines, 2010).

Research has identified a range of goal setting approaches and theoretical models currently being practiced health care. In the healthcare setting, the most commonly used goal setting strategy is the specific, measurable, achievable, realistic and timely goal (SMART). The SMART approach is said to be used in healthcare due to the simplicity of formulating the goal, time effective and objectively focussed (Parry, 2004). Although this approach is predominantly underpinned from industrial theory (Locke & Latham 1984), using a SMART approach can be a useful tool to help physiotherapists clinically reason when a patient is ready to be discharged (Smart & Doody, 2007). However it is argued that not all goals are effective for all patients according to Hartley and Stockley (2016), who state that in addition to using SMART goals, other goal setting approaches and theories should be explored for complex patients whom in particular, display cognitive or psychiatric symptoms.

Short and long term goals are also known within the literature as proximal (short term) and distal (long term) goals (Latham & Locke, 1991), and are a common approach used by physiotherapists (Hartley & Stockley, 2016). Short term goals are classed as weekly based goals (Poehling-Monaghan, Salem and Ross, 2017) and are implemented to enable a person to attain a goal in a quicker time frame compared to a long term goal which are set between three to six months in advance (Schunk, 1990). In addition, there are arguably pros and cons comparing short term with setting long term goals. Research shows that patients who set and attain short term goals result in higher motivation and increased self-regulation due to the frequency of the patient being able to self-evaluate their progress (Schunk, 1990). However, there needs to be a balance when setting a short term goal as

according to Locke and Latham (2006), setting a short term goal which is over easy to achieve may not necessarily increase a person's motivation. It would seem that setting a goal which is moderately easy as opposed to overly easy appears to optimise self-regulation (Bandura & Cervone, 1983). Setting a long term goals is said to improve a person's level of performance due to a subsequent increase on intrinsic motivation (Manderlink & Harackiewicz, 1984). In addition, people who set long term goals often tend to sub-divide them in to shorter goals, which may produce the benefits of setting purely short term goals (Schunk, 1990). There are clear benefits and potential drawbacks when setting short and long term goal, therefore this would suggest that from a physiotherapy perspective, it may be in the patient's best interest to select the goal setting approach based on the individual's needs.

There are other goals that have been reported to be used in healthcare. These other approaches are less common as opposed to SMART and short and long term goals. A learning goal is in which an individual seeks to increase their competency has often been used in various rehabilitation settings (Elliott & Dweck, 1988). An example of a learning goal is that the patient has some basic anatomy understanding regarding certain exercises they are striving to achieve or functional movements (Elliott & Dweck, 1988). A performance goal in relation to the healthcare environment is when an individual seeks to gain favourable judgement of their competence or avoid negative judgement (Elliott & Dweck, 1988). A learning goal orientation leads to higher performance than a performance goal (Locke & Latham, 2006). Goal attainment scaling (GAS) according to Turner-Stokes (2009) is a goal setting approach used in healthcare which involves using a mathematical technique for quantifying the achievement of goals that have been set. Each patient has their own outcome measure, which is standardised in a way to enable statistical analysis. Outcomes set by the patient are coded and analysed using excel

software to help quantify more specifically whether goals are being achieved. Because the outcomes are specific to the patient, involving patient specific goals/ outcomes are more likely to optimise the goals being met as opposed to more global set outcomes (Williams, 1988). GAS overall evaluates the goals that have been set by the patient, it does not involve other aspects to setting goals such as patient setting unrealistic goals, issues when goals are not achieved and goal acceptance/ commitment etc.

3.3.2 Goal setting approaches used in sport

When compared to the sports environment, scientific literature has identified three goal setting processes. These are outcome, process and performance goals (Taylor & Wilson, 2005). An outcome goal focuses on the outcome of an event, for example to win a competition (Kingston & Hardy, 1997). Performance goals are similar to outcome goals in relation to the outcome of an event, but instead they specify specific personal outcomes for example to run the race in faster time or to throw the discuss further (Filby, Maynard, & Graydon, 1999). Finally process goals focus on improving form, strategy and technique. A series process goals must be set in order to attain a performance goal, for example ensuring appropriate alignment during kicking the ball (Kingston & Hardy, 1997) or creating more forefoot contact to run faster. These goal setting processes used in sport have been empirically proven to improve athletic performance compared to a 'do your best' approach (Kyllo & Landers, 1994). Goals achieved in sport are said to be more successful if the goals are made more difficult to achieve, made more specific to the athlete and a number of short term goals within a long term goal are vital to optimise success (Tubbs, 1986; Weinberg & Roberts, 1992). Since the competitive goal setting model (CGS) was introduced over a decade and a half ago, many advances in research have revealed that performance and process goals have been the main focus as opposed to outcome goals (Horn, 2008). This is because goal setting in sport is best conceptualized

as a continuum where outcome goals is at the end of the continuum, process goals at the opposite end and performance goals midway between the two (Horn, 2008). Sometimes, if an outcome goal is set without any performance or process goals Burton (1989) suggests that not only does create too much stress for the athlete subsequently it can decrease confidence as the aim is too great without it being broken down into stages. Therefore it is important that focusing on process and performance goals leverages the athlete's competitive cognition and performance. In addition, intrinsic motivation and self-determination occurs when athletes feel confident and competent as a result of having control over their goals (Burton, 1989). Research has shown that for athletes to have control over their goals by setting specific and personal goals may not be as effective compared to traditional workplace set goals. The large discrepancy and failure to achieve goals in sport compared to industry goals may be linked with goals being set in sport either at the beginning or the end of season may affect athlete motivation depending on whether they are performing well and are motivated to continue to achieve the set goals compared to the work industry (Day, Gordon, & Fink, 2012).

There are a number of goal setting considerations when working with athletes. One consideration is having an understanding of the transitions which are inevitable and very often unpredictable in the athlete (Sinclair & Orlick, 1993). From a self-determination theory, a person may be intrinsically motivated due to their pure love and enjoyment of the sport and they may be extrinsically motivated due to a monetary reward if they were to win an event (Ryan & Deci, 2000). This may imply that the athlete depending on their psychological frame set could be at a volitional level of engagement in the sport. There may be times where non-self-determination occurs where extrinsically, there is pressure from the athlete's coach for the athlete to participate, but also intrinsically the athlete may feel guilty if they do not participate in the sport (Mageau & Vallerand, 2003). These

factors are important determinates in relation to goal attainment and athlete performance (Mageau & Vallerand, 2003). In relation to physiotherapists working in sport, not being aware of these factors could cause some issues where goal attainment is unlikely to occur or goals are not athlete led. The evidence would also suggest that physiotherapists who work in sport should have an understanding of the challenges from a goal setting perspective such as issues with motivation and the coach/ athlete relationship in order for goals to be successful. However, as highlighted previously in this chapter, there is evidence where the psychological content of UK physiotherapy training is inconsistent and minimal (Alexanders et al., 2015), therefore it is no surprise that physiotherapists welcome further training in psychology (Jevon & Johnston, 2003).

3.3.3 Goal setting processes

Locke and Latham (2002) proposed a goal setting model that was originally designed to be utilised in the work place, but has since been used in other areas such as sport and in some cases rehabilitation (Locke & Latham, 2013). Lock and Latham's goal setting process consists of a seven stage process. These processes are involving the person and setting clear goals, understanding the goal and committing to the goal (goal commitment), evaluating any barriers that may affect the person from committing to the goal, discussing the necessary steps in order to attain the goal (action planning), gaining feedback and clarifying any goals and adjusting if necessary (evaluate goal attainment and reinforcement of goals). Considering Locke and Latham have been researching goal setting for over four decades (Locke & Latham, 2006), there are limited reports in the literature demonstrating physiotherapists following an actual goal setting process. Figure 1 shows Lock and Latham's goal setting process:

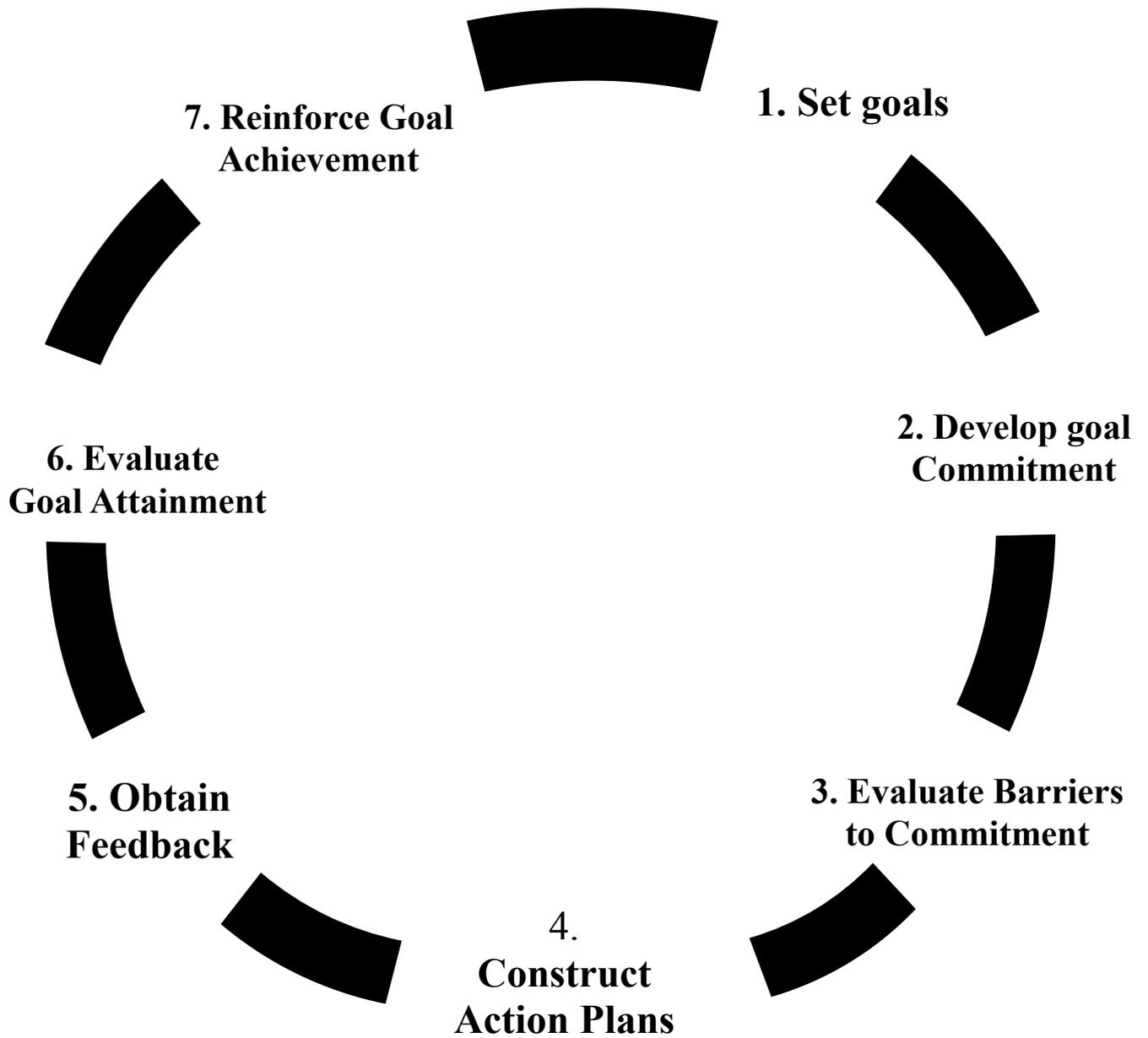


Figure 1: The Goal Setting Process (Locke & Latham, 2006)

Since Locke and Latham's goal setting framework, other frameworks have emerged with more of a healthcare/ patient focus. Scobbie, Dixon, and Wyke (2011), formed a goal setting framework which uses a cyclical process. This cyclical process allows both the patient and therapist to jointly make decisions regarding the rehabilitation process. These processes are; goal negotiation phase, where the patient is involved in the initial setting of the goal, goal setting phase, where the goals are translated in to actual treatment goals and the planning, appraisal and feedback phase where progress or regress is measured and fed back accordingly (Scobbie et al., 2011). Compared to Locke and Latham's goal setting cycle, Scobbie et al. (2011) is predominantly used within a broad area of rehabilitation, but it does concentrate within stroke rehabilitation, therefore the focus of the framework that is on targeting behaviours and implementing strategies to influence behaviour change. Although this approach may appear more clinically relevant as opposed to Locke and Latham's, there is nothing as of yet specifically designed to assist physiotherapists who work with patients following ACL surgery. Considering ACL rehabilitation is around six to nine months in duration (Beard, Knezevic, Al-Ali, Dawson, & Price, 2010) and 60-70% of patients do not return to pre-injury level of sport following ACL surgery (Brand & Nyland, 2009), this would highlight the importance that a framework is designed to maximise the return to play percentages. Correspondingly, Arvinen-Barrow, Hemmings, Arvinen-Barrow, and Walker (2013) designed a goal setting process for sports injuries. This framework is more clinically relevant to a sports rehabilitation setting. It involves a process chart where three types of goals are initially established. These are physical (range of movement, strength etc.), psychological (relating to confidence, stress etc.) and performance goals (physical and tactile development). These goals are then considered and formed in to short term (daily goals) which usually are set within the duration of a physiotherapy session. The next stage involves setting achievable objectives for physical, psychological and performance goals

in preparation for the recovery stage. The recovery stage is the final stage of this process where the ultimate outcome of rehabilitation can then be specified by the physiotherapist and patient as a result of considering the previous stages that occur before (Arvinen-barrow et al., 2006). Figure 2 displays the type and level of goals for rehabilitation:

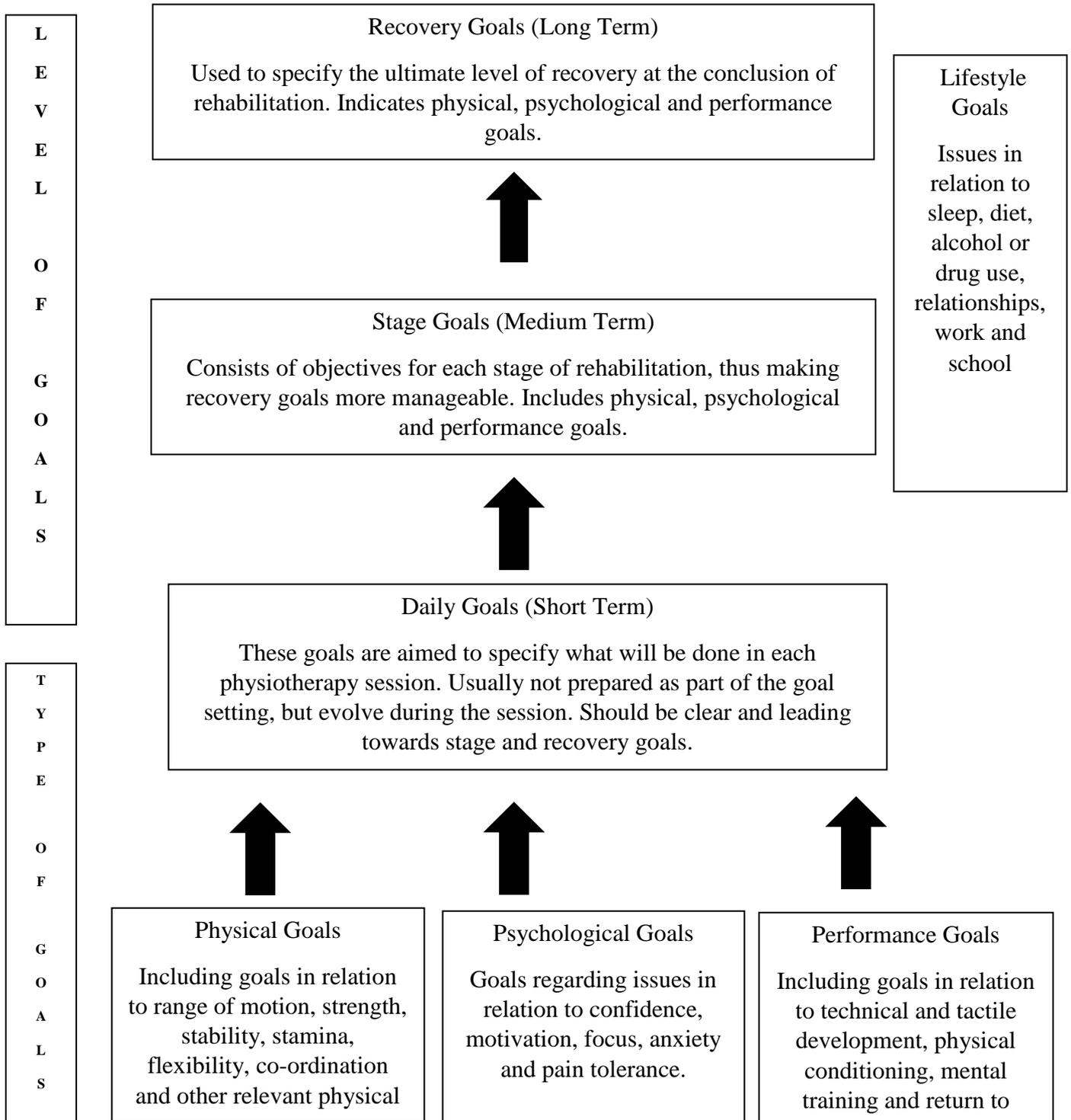


Figure 2: Types and Level of Goals for Rehabilitation (Arvinen-Barrow et al., 2013)

Similar goal setting processes exist in sport according to Mellalieu, Hanton, and O'Brien (2006), who used a four stage cyclical process. The first process named as goal determination is where a joint decision is made about what the performer wished to achieve. The goal setting phase involves creating a specific target for the goal, for example aiming to perform four tackles during a game. The final phase is goal feedback which involves using goal attainment scaling to evaluate the outcome of the goals using numerical data (Likert scale) Mellalieu et al. (2006). It is clear from the types and level of goal setting models that currently exist that following a process is essential to ensure that all important aspects of goal setting are considered. There is also an opportunity within ACL rehabilitation for a specific model to be designed to suit the need of the patient. Future research exploring physiotherapists' experiences of goal setting for patients following ACL surgery could potentially highlight aspects of the goal setting processes where physiotherapists require further training, or where a ACL framework that encompasses all aspects of the patient journey from pre-operative to return to sport/ work.

There is a paucity of research investigating the ways in which goals are implemented and patients are kept motivated once goals have been set by physiotherapists. Holliday et al. (2005), conducted a survey investigating the most common forms of goal setting used amongst physiotherapists and rehabilitation teams and found that a problem-orientated approach based on the physical assessment findings was the most commonly practised. It was found that patients were provided with very little information about the goal setting process, although 60% of practitioners reported giving patients a copy of their goals. Thirty percent of respondents used goals as a measure of rehabilitation effectiveness (Holliday et al., 2005). These findings suggest that a physiotherapists are not following a process to enable them to ensure that the patient is fully informed when planning goals and other important considerations such as feedback, goal commitment are incorporated.

3.4 Psychological theories relating to goal setting

3.4.1 The Rubicon Model of Action Phases

The Rubicon Model is a theoretical model that explores at the relationships between goal setting (motivation) and goal striving (volition) (Gollwitzer, 1990). It comprises of four phases; pre-decisional, pre-actional, actional and post actional (Gollwitzer, 1990). The pre-decisional phase is characterised by deliberation, where a person needs to decide which of their desires they want to pursue (Halisch & Kuhl, 2012). A decision however can only be made if the person has clarity on what they are wanting to pursue (Halisch & Kuhl, 2012). This phase is linked to the motivation of the person as they have not yet fully committed to their goal (Gollwitzer & Oettingen, 1999). The pre-actional phase is where the person has decided on a goal and is now exploring how best to go about achieving the goal (Gollwitzer, 1990). This phase is also known as when the person has crossed the ‘Rubicon’ (Heckhausen & Gollwitzer, 1987). A Rubicon according to the Oxford Dictionary (Collins 2018) is where ‘a person has reached a point where they cannot change their course of action’. This phase is related to volition as once deliberation is complete, plans are being made to pursue the intended goal (Kuhl, 1984). The actional phase is where individual efforts are specifically focused on pursuing goal directed actions (Gollwitzer, 1990). The person increases their efforts within this phase in the face of any difficulties that may arise. This phase is said to be related to volition, which is defined as being ‘the cognitive process by which a person decides on and commits to a particular course of action’ (Keilhofner, 2008). The post actional phase is where the person evaluates his/her efforts and decides whether the original goal requires de-activating or to maintain their original level of aspiration (Gollwitzer & Oettingen, 1999). This phase is considered to be within motivational thinking as the person not only evaluates their performance/goal attainment, future thoughts are also considered at this

stage (Kuhl & Beckmann, 2012). Since the delivery of this model, research has unpacked and further examined its usefulness in relation to patients receiving care, students in education and industry. Although this model may be useful as a foundation to understand the relationship of goal intention to goal attainment, from a patient perspective, other aspects need to be considered such as the environment, practitioner/ patient relationship, social support and the personality type of the patient (Keller, 2009).

3.4.2 Trans-theoretical model of health behaviour change

The trans-theoretical model (TTM) is a model that uses a framework to help assess, understand and influence human behaviour change (Prochaska & Velicer, 1997). It was first designed in 1982 to assist with smoking cessation and its model aims to facilitate and understand behaviour as a process as opposed to a single event (Adams & White, 2003). The TTM is reported to explain why behaviour change occurs and suggestions on how negative behaviours can be improved (Marcus et al., 1992). The TTM is structured in to six stages of behaviour change. These are Pre-contemplation; where there is no intention to change the behaviour. Contemplation; where the individual recognises their behaviour should change, but has not made any attempts to change their behaviour. Preparation; where the individual has started to make some changes, but on an irregular basis. Action; where the individual has been continuing to make the behaviour changes, but less than six months. Maintenance; where the individual has sustained their new healthy behaviours for over six months. Termination; where individuals are not tempted to revert back to any unhealthy behaviour (Prochaska & Velicer, 1997). Individuals who are at a specific stage of behaviour change, the TTM can suggest a number of strategies to progress individuals through the stages. Some of these strategies include conscious raising, motivational interviewing techniques, evaluation re-evaluation and goal setting (Prochaska, 1994). The strategies suggested by the TTM to help improve behaviours is

questionable. (Godin, 1994) argues that a full understanding of each individual who displays stages of behaviour change must be fully understood and only then could a specific strategy of suggestions be made to improve or change an unhealthy behaviour. In addition Rosenberg, Hovland, McGuire, Abelson, and Brehm (1960) imply that one strategy does not fit all as behaviour change comprises of such complexity such as attitude, belief, mood, self-efficacy, therefore suggesting that one approach may not benefit all. This would imply that the trans-theoretical model may be a useful tool to use when looking at goal settings, but the strategies or goal setting processes used should be based on an individual basis.

3.4.3 Social cognitive theory (SCT) and self-regulation

Social cognitive theory (SCT; Bandura, 1991), consists of a behaviourist and social learning framework (Stajkovic & Luthans, 1998). Social cognitive human behaviour is extensively motivated and regulated by self-influence (Bandura, 1991). SCT explores how humans tend to learn through a social context and the cognitive part looks at more the actual thought processes of human action (Stajkovic & Luthans, 1998). Self-influence has a number of self-regulatory subsystems, these systems are said to provide the foundation of purposeful action (Bandura, 1991). Therefore desire and intention is not enough on its own if people lack the ability or self-efficacy to have any influence over their level of motivation and behaviour (Bandura & Simon, 1977). Self-efficacy according to Bandura (1994), is said to play a pivotal role in SCT. For example, from an work place environment, if people have the behavioural, cognitive and social understanding to complete a task, not having the belief in their capabilities to execute the task may cause a reduction in their effort level, as result they may not achieve the task (Hawkins, 1992).

SCT is said to have five basic human capabilities, all which may provide some insight as to why people behave differently in the same environment and same organisational circumstances. These are; symbolising, forethought, vicarious learning, self-regulation and self-reflection (Stajkovic & Luthans, 1998). Symbolising is where people have an ability to use visual symbols as a guide to help transform their cognitive processes, this in turn influences their actions of a specific task (Stajkovic & Luthans, 1998). Forethought is where peoples actions are influenced by anticipatory thoughts and the likely consequences of a task (Stajkovic & Luthans, 1998). Vicarious learning is where actions are influenced by observing other people's behaviours, and the consequences of those behaviours help exercise more cognitive processes (Stajkovic & Luthans, 1998). Self-regulatory capacity is where actions are influenced by internally self-set standards and self-evaluative reactions to behaviours (Stajkovic & Luthans, 1998). Finally, self-reflective capability is where people reflect and think about their own experiences which enables them to deal more effectively with the demands of the workplace (Stajkovic & Luthans, 1998). Overall, having an understanding of SCT in relation to using a motivational tool such as goal setting, may provide a more comprehensive understanding in relation to task complexity, goal commitment and possibly identifying any issues associated with goal achievement.

Having an understanding of SCT and self-efficacy is of paramount importance when using goal setting within physiotherapy. If a physiotherapist uses goal setting on a patient who possess high levels of self-efficacy, this alone has been linked with higher achievement rates, increased motivation and increased well-being (Barron, Klaber Moffett, & Potter, 2007), all of which could have an influence on whether a goal is achieved or not. By giving the patient the opportunity to discuss the goal (whether they have self-set, or set the goal in collaboration with the physiotherapist), may highlight

whether a patient has more of a bias towards one of the five human capabilities as aforementioned. For example, the patient may discuss how they are going to achieve the goal/ task based on observing a behaviour, or they may discuss the likely outcome of how the goal is going to be achieved using forethought capacity. Linking the theoretical understanding of the SCT in relation to goal setting, may allow the process to be tailored more specifically to optimise goal achievement.

3.4.4 Self-determination theory (SDT)

The self-determine theory (SDT) is said to encompass a broad framework theories concerning the study of human motivation and personality (Ryan & Deci, 2000). SDT explores why people display certain behaviours, in particular intrinsic and extrinsic motivation in cognitive and social development in individuals (Sheldon, Ryan, Deci, & Kasser, 2004). SDT has been researched and applied in a number of areas such as parenting, healthcare, sport and education (Ng et al., 2012). Ryan and Deci (2000), suggests that human beings have three psychological needs, these are autonomy; feeling central to one's behaviour, competence; feeling effective and relatedness; feeling cared and understood by others. These needs have been empirically proven to form the basis of energy required to initiate and motivate health behaviours (Silva, Marques, & Teixeira, 2014), therefore the type of motivation demonstrated by individuals is central to SDT.

During the past decades SDT has focussed on the concept of self-regulation, which comprises of both intrinsic motivation and well-internalised extrinsic motivation (Ng et al., 2012). Intrinsic motivation involves demonstrating a particular behaviour due to the activity itself is of interest to the individual and deeply satisfying (Deci & Ryan, 2008). White (1959) states that intrinsically motivated people who feel positive from the activities undertaken display more curiosity and tend to optimise performance. In contrast, extrinsic motivation involves engaging in an activity it leads the individual to a separate

consequence (Deci & Ryan, 2008). An example of extrinsic motivation is to obtain a financial reward or avoid some form of punishment. Extrinsic motivation is invariably seen as non-autonomous whereas intrinsic motivation is autonomous in that it is deeply reflected in the endorsement of one's behaviour (Silva et al., 2014). Teixeira, Silva, Mata, Palmeira, and Markland (2012), classed intrinsic motivation as autonomous self-regulation has found benefits related to healthcare. Autonomous self-regulation shown positive associations with abstinence from tobacco and improved adherence to taking medication (Williams, Niemiec, Patrick, Ryan, & Deci, 2009). Extrinsic motivation is also known as being controlled, such as the pressure to think, feel or behave in a particular way to achieve a goal (Soenens et al., 2007). In healthcare, if patients are given a diagnosis of a condition in which they are advised to how best manage their symptoms can be a challenge for clinicians. Research has shown to enable controlled type patients to manage their symptoms more effectively would be to respect their views and give them choices over the management of their care, thus facilitating a more autonomous approach to managing symptoms (Ng et al., 2012). Understanding the various theories that surround motivation is an important consideration for physiotherapists working in an area where setting goals is required job role.

3.5 Issues associated with goal setting in clinical practice

It is clearly documented in the literature that physiotherapists not only use goal setting as part of clinical practice (Jack, McLean, Moffett, & Gardiner, 2010), but also claim they are effective at implementing this tool (Hemmings & Povey, 2002; Jevon & Johnston, 2003). Goal setting appears to serve a range of functions and there are somewhat conflicting approaches in the use/purpose of goal setting within rehabilitation (Levack, Dean, Siegert, & McPherson, 2011). In addition, a large number of studies that have investigated the effectiveness of goal setting within physiotherapy practice have found

some concerning findings. A cross-sectional study by Donohue, McLaughlin, Crowe, and Horgan (2014) investigated adherence to physiotherapy in patients who had suffered a stroke. Findings revealed that although a large proportion of patients were involved in the goal setting process, the compliance to treatment was only 39%. The authors concluded that the low compliance and adherence to physiotherapy despite effective goal setting being implemented was more to do with poor organisation of the service that was provided in relation to appointments given. (Donohue et al., 2014) did not investigate the possible issues surrounding the actual planning and implementation of the goal setting process. The term 'poor compliance' seems to be a popular outcome of studies exploring goal setting amongst physiotherapists. Bassett and Petrie (1999) investigated the effect of patient compliance on physiotherapy exercise programs. Patients with lower limb injuries were split into three groups, with one group not being set any goals, one group being set patient-led goals and one group being set combined patient and physiotherapist led goals. The group with no goals set achieved superior outcomes compared to the other group in relation to knee function, attendance percentage and subjective pain scales. Bassett and Petrie (1999) concluded one reason for this was that the group with no goals set were possibly more motivated than the other two groups. Future research exploring goal setting practices employed by chartered physiotherapists may provide an understanding as to whether physiotherapists require being taught a range of setting goals approaches so that patients can receive a more tailored rehabilitation programme.

Pearson & Jones (1992) found patients felt that physiotherapists support them psychologically during their rehabilitation. According to Barron et al. (2007) expectations are an integral part of the psychosocial makeup of each patient, and there is a growing recognition amongst physiotherapists that psychosocial issues may impact the outcome of physiotherapy. It has also been suggested that patients report feeling they are not involved in the decision making process during their rehabilitation (Potter, Gordon, and

Hamer (2003). For example, when goals have been set in order for them to achieve a particular task, this unfortunately has tended to be physiotherapy mandated as opposed to a patient centred approach (Potter et al., 2003). This would question the effectiveness of goal setting as it is reported that patients who initiate and set their own goals are said to be more motivated, participate more and are satisfied more during the rehabilitation process (A. Stevens, Beurskens, Koke, & van der Weijden, 2013). In some ACL rehabilitation settings, patients have experienced goal setting either one to one with their physiotherapist and in a group setting (Scobbie et al., 2011). However, the benefits and issues relating to group versus one to one goal setting can be linked to the psychological status of the patient. For example, if the patient is experiencing feelings of isolation and low mood, encouraging a group goal setting may be beneficial as the patient can see the potential progress of like-minded patients and can feel part of a team (Parry, 2004). In contrast, a patient who has poor self-efficacy may feel more intimidated if they are in a group where another patient is at the end of their rehabilitation (Parry, 2004). Although some physiotherapists appear to have implicit knowledge about the psychological symptoms associated with musculoskeletal disorders, this mainly appears to have been gained through experiential learning (Jevon & Johnston, 2003). This however does not seem to be supported by underpinning psychological theory, or formal training regarding the psychological models and practices (Jevon & Johnston, 2003). A potential benefit of increasing psychology education within physiotherapy training may allow physiotherapists to make more clinically reasoned decisions as to whether patients receive goal setting in a group/individual, type of goal, patient led or collaborative goal setting.

3.6 Physiotherapy as a profession

Physiotherapy was first established in 1894 as a massage profession and has developed dramatically with 51,000 physiotherapists currently practicing in the United Kingdom alone (CSP, 2013). Physiotherapy is described as a upper middle-class predominantly female profession and said to enjoy higher occupational prestige than other health care professions, largely due to the recruitment of upper middle class women (Short, 1986). According to the CSP, physiotherapists form the third largest group of healthcare professionals in the National Health Service (NHS) and work in many different areas within the NHS (CSP, 1998). A considerable proportion of physiotherapists predominantly work clinically, but others are increasingly becoming involved in teaching, management and research (CSP, 1998). Physiotherapists are well known within the public domain, largely for their input within the musculoskeletal field (Sheppard, 1994).

Physiotherapists have been perceived by the general public to have good qualities such as effective communication skills, a professional approach and knowing their own scope of practice (M. Potter et al., 2003c). This suggests that physiotherapists are generally seen as reliable and trustworthy healthcare practitioners. Physiotherapists work in a variety of disciplines and environments and are one of the main providers of the (NHS). Another major area that physiotherapists play an essential role in is sport, helping to meet the healthcare needs of individuals involved in a vast array of different sports, covering the full spectrum of ability levels from amateur to elite athletes (Anon, 2014b). Any physiotherapist with a special interest in sport can join the Association of Chartered Physiotherapists in Sport and Exercise Medicine (ACPSEM; (Anon, 2014b). This creates possible opportunities for physiotherapists to gain experiences working in a variety of areas of sport, potentially progressing to working in high end sport such as Olympic level sport and from a UK perspective, working for the English Institute of Sport (EIS).

Throughout the years, physiotherapy has had to evolve due to the current climate of change within the NHS and also the sports and private sector (Naylor, 2007). Physiotherapists have traditionally adopted a predominantly biomedical view when treating patients (Nicholls & Gibson, 2010). However, it is now expected that physiotherapists should have the skills to deal with the psychological health and wellbeing of patients (CSP, 2013). Unfortunately evidence suggests that physiotherapists may feel inadequately trained to meet their patient's psychological needs, but would welcome further training in this field (Hemmings & Povey, 2002).

3.6.1 A Historical Review of Physiotherapy

The origins of physiotherapy can be traced back to the 1880's, where massage, especially Swedish massage (Nicholls & Cheek, 2006), formed part of nursing training (Nicholls & Cheek, 2006). Due to its popularity and the widespread demand for massage, massage was removed from nursing and formed as a distinct profession in 1894, at first called the Society of Trained Masseuses (Barclay, 1994). The profession at this point consisted of only ten female practitioners (Walker, 1929). This unfortunately led to a scandal concerning the so called "massage rooms", triggering a national enquiry in to the work of the massage practitioners (Anon, 1894), which consequently led to a national enquiry. The scandal was initially raised by the British Medical Journal (BMJ) which alleged that the profession was "working within the shadow of prostitution" (Nicholls & Cheek, 2006). The society of trained masseuses responded to these allegations by providing scientific evidence in support of massage and by 1920 the society was awarded its first charter, enabling it to change its title to The Chartered Society of Massage and Medical Gymnasts (CSP, 2013). Up to this point, only females were working as masseuses but men were allowed to join the profession shortly after the title change in 1920 (CSP, 2013).

During the first world war, the society was employed by the war office to work for the military, providing a massage service to soldiers (Walker, 1929). In 1914 the society became part of the Almeric Paget Massage Corps (APMC), providing front line service men with treatments to make a concerted effort to get men back to the front (Barclay, 1994). The society was not necessarily taken seriously as a medical profession as surgeons and consultants were not entirely aware of the scope of medical gymnasts (Walker, 1929). During 1917 the society published an article on the effects of physical therapy on patients suffering from the effects of encephalitis lethargica, which is a disorder of the central nervous system mainly affecting the basal ganglia. It was only then, did the medical profession start to take the society seriously (Walker, 1929). Subsequently, further advances in treatments enabled the scope of medical gymnasts to expand. Treatments such as hydrotherapy, electrotherapy, Swedish massage and biomechanical movement approaches began to be used as part of the profession (Pettman, 2007).

Throughout the 1920s the society expanded dramatically in other countries, with the Australian School being founded in the early 1920s and the American Physical Therapy Association (PTA) being founded in 1921 (Chipchase et al., 2006). Due to the expansion and evolution of society within the military setting (Linker, 2005), the popularity of undergraduate students applying to study medical and remedial massage rose considerably throughout the 1920s and 1930s (Linker, 2005). Furthermore this led to a significant increase of the number of therapists that were practising in the UK during the 1920-1930s (Hunt, Adamson, Higgs, & Harris, 1998). Bagniet, Boon, and Ostbye (2000) thought that popularity of the society at this stage may have been due to media exposure within the public domain and the perceptions of other medical professions that work alongside remedial gymnasts. According to P. Turner (2001). The growth and expansion of the profession in other countries, was partly related to massage therapists emigrating

from the UK and establishing links with countries such as Australia. Furthermore, during the 1930's a shortage of work encouraged the society members to work abroad through the military (Anon, 1926). Physiotherapy's first clinical interest group was formed in 1922 and was called The Association of Teachers of remedial gymnasts (CSP, 2013). During 1934, the society branched in to working with athletes in sport. The first major event where a remedial gymnast was present at the England Tennis Championship and the Australian Davis Cup Team (Dowsing, 1962). The second clinical interest group, the Association of Orthopaedic Chartered Physiotherapists, was not formed until 1945, allegedly in response to the extensive physiotherapy input for post war orthopaedic injuries (Moffat, 2012) .

In 1940's, Mr Ludwig Guttmann (who was a neurologist and first established the Paralympic games) was asked by the government to establish a number of spinal units with the intention to treat injured soldiers (Anon, 2014a). It was not until that point that the term 'rehabilitation' arose, denoting a concept which revolutionised the lives of injured servicemen (Northrup, 1942). The Ministry of Health set up a number of rehabilitation units led by remedial gymnasts and other health care professionals in order to help restore physiological and psychological function for not only injured servicemen, but also injured civilians (Northrup, 1942). By 1944, the society changed its name for the final time to the Chartered Society of Physiotherapy (CSP 2014).

Physiotherapy was part of the birth of the National Health Service on July 5, 1948 (Gray & Phillips, 1994). A number of major polio epidemics during the 1950s led to new developments in respiratory care and to a greater awareness of the true scope of physiotherapy practice throughout diverse areas of healthcare (CSP, 1998). The profession of physiotherapy in the UK was still undergoing a period of change as a result

of a numerous pressures from different health professional groups. In addition, wider organisational changes in the NHS imposed by the Labour Government pushed the profession to change established working practices in order to improve standards within an NHS setting (Wiles & Barnard, 2001). This meant that physiotherapists were encouraged to 'prove' the effectiveness of their interventions by providing scientific evidence through a process known at the time evidence based practice (EBP). EBP was also a central element of the Government's proposals for modernising the NHS (Wiles & Barnard, 2001).

The CSP became a founding member of the World Confederation of Physical Therapy. The Confederation held its first televised world congress in 1953 (CSP, 2013), which gave the profession additional public exposure, increasing awareness of the profession further. This not only helped raise the profile of physiotherapy but also helped it become recognised internationally as an independent profession and accepted as part of the medical/scientific community. By the early 1970s additional training schools were being established such as the Northern Ireland School of Physiotherapy (CSP, 2013). Although becoming more scientific and medically supported, at this stage physiotherapists were not classed as autonomous practitioners and as previously discussed, were managed by medical consultants and orthopaedic doctors regarding day to day clinical organisation and the referral of patients (Øvretveit, 1985). Research implies that within the NHS doctors took responsibility for the early development of physiotherapy training (Richardson, 1999). Their role was to provide clinical training for physiotherapists. Furthermore all patient referrals were also mediated through doctors (Richardson, 1999). Doctor's involvement in the profession remained particularly prominent until 1978, at which point change in the bye-laws of the CSP granted physiotherapists greater autonomy in patient care. (Øvretveit, 1985). (Øvretveit, 1985). Medical consultants were able to

allocate work, judge physiotherapist performance and decide training needs (Øvretveit, 1985). This continued until 1977 when the Department of Health established professional autonomy for physiotherapists (Sim, 1985). Not only did this allow physiotherapists to make clinical decisions regarding patients, they had the authority to refer patients to a doctor and identify their own training needs (Mercer, 1980). They were also granted power to provide an opinion regarding budgets and service delivery of physiotherapy. The increase in autonomy led to opportunities for physiotherapists to gain managerial roles within physiotherapy departments, enabling physiotherapists to have greater influence in higher decision making of the NHS (Øvretveit, 1985). The status of the physiotherapy profession gradually increased over many years through various factors such as the acceptance of structured body of knowledge and expertise, regulation by the health and care profession council and development of codes of practice specifically for physiotherapist (Richardson, 1999).

3.6.2 A Historical Review of Physiotherapy Training

Physiotherapy predominantly started out as massage, therefore treatments consisted of a hands on approach (Fairbairn, 1953). Throughout the first and second world wars the treatment repertoire of physiotherapists expanded significantly to include ultra violet light therapy, hydrotherapy and exercise rehabilitation (Ewerhardt, 1938). Due to the psychological effects of war, such as shell shock and post-traumatic stress, lectures in psychotherapy were delivered to medical gymnasts, with medical gymnasts repeatedly requesting more training in psychotherapy (Barclay, 1994). Unfortunately the society's medical mentors had contempt for all aspects of the psychotherapy training (Barclay, 1994). Awareness of the importance of treating patients, bodies and minds appeared to be relatively well maintained initially. However it is thought that the manual therapy approach devised by Dr James Cyriax in 1944, which emphasised techniques such as deep

tissue friction massage and manipulations, encouraged physiotherapists to focus purely on hands on physical approaches again (Cyriax, 1944). Up until the 1970s physiotherapy training was predominantly hospital based, with only a few training courses involving a combination of hospital and college based learning (Hunt et al., 1998). Due to the day to day demands of clinical practice within the NHS, physiotherapists were trained to demonstrate their competency as autonomous practitioners through the clinical application of specific skills and knowledge (Higgs, 1993). Adamson, Harris, Heard, and Hunt (1996) highlighted that towards the late 1970s qualified physiotherapists were trained at university level in order to gain a greater understanding of the NHS politics, directions in health care and skills in management and develop a greater level of reasoning. In addition, Hunt et al. (1998) explored the curriculum framework of physiotherapy and suggested that in order for physiotherapists to engage successfully in self-directed/lifelong learning and continue to contribute to enhancing the skill set of the profession, physiotherapist training should be trained at university level in order to be provided with the requisite academic skills as a result of the aforementioned factors. The first physiotherapy degree course was taught in 1976 at the University of Ulster (CSP, 2002).

By the early 1990s physiotherapy training had moved from being hospital based to an integrated approach involving both university and hospital environments. Nonetheless issues remained regardless the balance of academic skills versus clinical skills of the physiotherapy graduates (Shepard & Jensen, 1990). According to the then Secretary of State for Health, physiotherapists were under threat to provide a rationale for commonly used physiotherapy techniques in order to justify the need to continue providing physiotherapy within the NHS (Wiles & Barnard, 2001). This highlights the paucity of evidence supporting the use of physiotherapy techniques (Wiles & Barnard, 2001). A study by Sole et al. (2012) investigated the employers perception of competencies of

newly qualified physiotherapists and found that there were issues concerning low confidence, minimal working knowledge and a perceived lack of enthusiasm and commitment. This infers that undergraduate training needs to incorporate more training in practical skills such as interview skills and multi-disciplinary working. In addition, Hunt et al. (1998) states that physiotherapy graduates need to have skills and attributes relevant to their day-to-day practice to enable them to be confident and competent. They also need skills and attributes that will enable them to adapt to changes and develop professionally. Shepard and Jensen (1990), used questionnaires to investigate how graduate physiotherapists rated their abilities to cope with the demands of their places of work. The results reported that graduates felt they were well prepared for research activities and effectively reading professional literature; however they felt limited in their practical skill set (Shepard & Jensen, 1990). It has been suggested that it is not feasible for university institutions to provide graduates with the necessary practical skills to cope with the demands of clinical practice. Instead it is thought that clinical education should provide any additional training required by students who are on placement to ensure that they are adequately prepared for the workplace (CSP, 2005). During the 1980s physiotherapy schools shifted to delivering the academic aspects of their training at universities and relying on hospitals to provide student placements the roles of clinical educators became increasingly important. These hospital based clinical staff became largely responsible for ensuring students were gaining vital hands on skills within a healthcare setting (CSP, 2005).

During 1985, the society of remedial gymnastics and recreational therapy merged with the CSP (Anon, 1989). Recreational therapists skills differ from a remedial gymnast in that they aim to maximise function and mobility by using music, dance, drama and crafts (Anon, 2015b). On completion of a formal examination, remedial gymnasts and

recreational therapists then had the right to use the title of chartered physiotherapist (Anon, 1989). It was felt that remedial gymnasts possessed skills that were very similar to physiotherapists (Anon, 1989), despite remedial gymnasts initially being trained for a period of six month only, although this training duration did increase to two years (Clews, 2010). During the 1990s the CSP campaigned to have the title chartered physiotherapist protected and by 1994, the health council agreed to allow the title chartered physiotherapist to become a protected title (Skyte, 1993). As a result of this, the society became an all graduate entry profession in 1994 (CSP, 2013). This meant that remedial gymnasts or recreational therapist could no longer apply to join the society and use the Chartered Physiotherapist title. All CSP members who joined the society before 1994 were however still allowed to use the title of physiotherapist, regardless of whether they had completed a physiotherapy degree course. This would suggest that although all members are in theory physiotherapists, their training backgrounds may not all be of the required standard.

The physiotherapy profession continued to evolve from a training perspective and during the late 80s and early 90s MSc programmes had been written and were already starting to flourish (Moore, 2006). By the late 90s the government made various changes to funding structures of the NHS, with numerous staffing cut backs being made (Hunt et al., 1998). Therefore the NHS job market became competitive and physiotherapists who had Masters were seen as having an advantage when applying for posts (Hunt et al., 1998). In 1999 the NHS underwent a structural reorganisation called the Agenda for Change where job roles were reviewed and pay scales were matched accordingly (Johnstone, 2013b). The agenda for change represented a considerable improvement on the old Whitley Council System, which was the original system used by the NHS for determining job roles and pay for physiotherapy, physiotherapists and physiotherapy assistants

(Johnstone, 2013a). Physiotherapy banding was based on experience, academic achievement and continual professional development. In addition, a framework was developed alongside the agenda for change called the Knowledge Skills Framework. This provided an objective framework for evaluating job roles according to a scoring system, enabling jobs to be placed in an appropriate pay band (Anon, 2009). This however was not widely accepted within some physiotherapy departments. For example senior physiotherapists working in intermediate care felt that the agenda for change had expanded their roles and responsibilities (McClimens, Nancarrow, Moran, Enderby, & Mitchell, 2010).

In 1995, the first extended scope practitioner (ESP) posts for physiotherapists were created within the NHS, predominantly in the area of orthopaedics (Wagstaff, 2001). This was said to reduce the demands placed on junior doctors by replacing them with ESPs in orthopaedic outpatient clinics (Wagstaff, 2001). ESPs underwent additional training, mainly from registrars, in areas such as x-ray interpretation, injection therapy and taking bloods, to allow physiotherapists to work beyond the traditional scope of physiotherapy practice (Gardiner, 1999). In 2002, the first consultancy post in physiotherapy emerged and Paul Watson was appointed as an honorary consultant physiotherapist at University Hospitals of Leicester Trust (CSP, 2013). The difference between an ESP and a consultant physiotherapist was that an ESP had training which was beyond the scope of a physiotherapist and a consultant physiotherapist was a specialist in a particular discipline of traditional physiotherapy (CSP, 1995). By 2005, the presence of NHS trusts with budget deficit and the recent economic downturn led to a change in the job market making junior physiotherapy jobs scarce (Jones, McIntyre, & Naylor, 2010). Additional physiotherapy services were being set up to create more work for physiotherapists in order to cope with the saturated market of newly qualified physiotherapists (Mackler, 2005).

These areas focussed on increasing rehabilitation services to support incapacity benefits, health prevention as part of government schemes new opening of high street physiotherapy drop in clinics and working with long term conditions as stipulated by the national service framework (NSF) (Mackler, 2005). During this time, the activities of insurance related claims for problems such as whiplash associated disorder and occupational related injuries were rising significantly, creating a greater demand for physiotherapy services in these areas (Mooney, 2012). Newly qualified physiotherapists who were unable to gain NHS employment due to insufficient number of jobs available were left with little option but to branch out into different areas such as sports physiotherapy. This may indicate that the NHS at that time was experiencing a short fall of staff versus the number of graduates seeking employment in this field. The implications of this could result in potential long term university recruitment issues if job prospects post-graduation were going to be a problem.

3.6.3 Psychology Training in Undergraduate Physiotherapy

In 1971 Up until the 1980's, psychology training was minimal within undergraduate and post graduate physiotherapy training. In the early 1980s the Scientific Affairs Board of the British Psychological Society (BPS), set up a working party on teaching psychology to other professionals (Baddeley & Bithell, 1989). This was aimed to reach out to other professionals, including physiotherapists, to educate them regarding how psychology could be integrated into their profession and help inform potential research. The Chartered Society of Physiotherapy (CSP) decided to place a greater emphasis on behavioural science topics within the undergraduate physiotherapy curriculum. Baddeley and Bithell (1989) investigated psychology teaching within British physiotherapy curriculum and found that psychology was not being taught in training. The majority of students agreed that psychology had a level of importance, but were keen to stress that 'they were not

psychologists'. According to Carr, Mungovan, Shepherd, Dean, and Nordholm (1994) physiotherapist's choice of treatments for patients is often a result of their undergraduate and post graduate training. Therefore it would be reasonable to argue that not having studied a core psychology module may discourage physiotherapists from using psychological assessment and treatment techniques as part of their clinical practice. A possible suggestion would be for educational establishments to consider more psychology based content to ensure new graduates are prepared for the ever changing climate in which they are about to practice in. This is the approach taken by other training programmes, such as American Athletic Trainer degree programmes, which are required to include a minimum of six weeks psychology training, with the option of further psychology modules also being available to students (Stiller-Ostrowski & Ostrowski, 2009). Furthermore Strength and Conditioning trainers also receive comprehensive training in psychology modules to assist with performance and rehabilitation (Radcliffe, Comfort, & Fawcett, 2013). From an allied health care professional training perspective, nursing programmes are also reviewing their curricula due to the current NHS climate to include training in applied psychology and communication skills (McCarthy, Trace, & O'Donovan, 2014). Moreover, nursing students not only receive training in applied psychology, but they are assessed from a competency standpoint to ensure they are able to apply psychology related skills in practice (McCarthy et al., 2014). This suggests that undergraduate physiotherapy students are not receiving similar levels of training in psychology compared to other health and sport undergraduates.

From a learning outcome perspective, physiotherapy degree programmes are obligated to align their learning outcomes to the NHS knowledge and skills framework. Psychology topics such as self-efficacy must be incorporated into undergraduate training in order to achieve CSP accreditation (Physiotherapy, 2002). It is clearly documented that

psychological symptoms following injury or diagnosis of a musculoskeletal condition are very common (Main, Sowden, Hill, Watson, & Hay, 2012; Watson, 1999). Furthermore such symptoms that have been associated with musculoskeletal problems have been fear of pain, re-injury, depression, low confidence and self-efficacy issues (Waddell, 1992). This is related to evidence suggesting that individuals undergoing rehabilitation following an injury or surgery experience not only physical but also psychological disturbances (Walker, Thatcher, & Lavalley, 2007). Diverse symptoms such as anger, depression and self-efficacy problems have been observed in both the sporting (Schwab Reese et al., 2012) and non-sporting (Pearson & Jones, 1992) population of patients. In addition, NHS physiotherapy job descriptions are based working within the NHS are required to meet standards specified by the KSF. Dimensions HWB6 and HWB7 of this framework emphasise the importance of considering both physiological and psychological factors throughout assessment and treatment planning and implementation (Health, 2004). Furthermore, all physiotherapists are legally obliged to adhere to the Health and Care Professions Council's standards of proficiency for physiotherapists (Council, 2013), with standard 13.9 indicating that physiotherapists must understand how psychological aspects influence individuals' responses to their health status and physiotherapy interventions. Despite this, a mixed methods study of 17 United Kingdom universities demonstrated that although some psychology training is included in physiotherapy programmes significant disparities exist in the extent of training provided and how it is delivered (C Heaney, Alison, Rostron, & Walker, 2012). Additionally this study highlighted the vast array of different topic areas that are considered under the umbrella term "psychology", including communication skills, personality theories, effective team working and the psychological impact of terminal illness. Ogiwara (2003) conducted a cross-international survey of undergraduate perceptions of professional training that reported although students felt treating the patient holistically was of high importance, they had less concern

for the psycho-social well-being of the patient. According to Watson (2013) social and psychological topics are often given a low level of priority when it comes to educating undergraduate physiotherapy students. Consequently, students are rarely given the tools to effectively assess or identify the psychological needs of patients (Watson, 2013).

There appears a lack of consistency between physiotherapist who were previously provided with formal psychological training and physiotherapists who have developed an understanding through experiential learning (Cupal & Brewer, 2001). A lack of consistency across the undergraduate curriculum, coupled with student and new graduate perceptions of psychology, would indicate further research aiming to demonstrate the importance of standardising the psychology content of UK physiotherapy degree programmes. If undergraduate programmes prioritised psychology as a core modules with appropriate competency assessments, this could potentially help better prepare students for the demands they will face in clinical practice.

3.6.4 Psychology Training within Post Graduate Physiotherapy Practice

In the early 1970s only 10 physiotherapists were working in psychiatry (Abbott, 1988). In 1982 a small group of pioneering physiotherapists decided to set up a working group called The Association of Chartered Physiotherapists in Psychiatry (ACPP) (Abbott, 1988). In 1986, the ACPP designed a foundation course aimed at enhancing physiotherapists understanding of how to work effectively with patients with mental health disorders (Everett, Dennis, & Ricketts, 1995). However, the uptake of this course was minimal. In the early days of the ACPP the working group changed its name to Chartered Physiotherapists in Mental Healthcare (CPMH). This group aimed to increase physiotherapists understanding of working in mental health through providing information and training on areas such as legislation, acts and policies when working with

vulnerable adults (Dimond, 2009). The association focuses more on working with vulnerable adults as opposed to psychology techniques used in musculoskeletal physiotherapy. To date, there is not a specialist group within physiotherapy that focuses on psychology, which is disappointing given the growing evidence of psychology being a fundamental part of physiotherapy practice.

Although research investigating psychology within physiotherapy practice is relatively scarce compared to that in other disciplines of physiotherapy such as chronic low back pain, whiplash associated disorder (Harland & Lavalley, 2003; Spitzer et al., 1995), anterior cruciate ligament reconstruction (ACL) reconstructions (Cupal & Brewer, 2001), neurology (Scobbie, Dixon, & Wyke, 2009; Scobbie, McLean, Dixon, Duncan, & Wyke, 2013) and sport (Schwab Reese et al., 2012). Chronic low back pain and whiplash associated disorder are two particularly relevant given the considerable increase in these two disorders that has occurred over the past decade, a phenomenon potentially related to rising litigation claims (Watson, 1999). Practitioners providing healthcare to sporting and non-sporting patients are well placed to identify psychological problems and to provide emotional support for patients experiencing such symptoms (Jevon & Johnston, 2003). It is suggested that physiotherapists should have the skills to identify and manage patients with psychological symptoms (Main et al., 2012), Watson (1999) raised the following concerns about this suggestion, These concerns were:

“Are there any psychological measures that can currently be used in physiotherapy practice? Once these factors have been identified, what is the physiotherapist expected to do about them? How can the results of such a screen inform clinical decision-making? Can physiotherapists recognise when they are out of their depth? When do they refer on to a specialist practitioner or interdisciplinary team? What additional training is required? What are the competencies required for practice in this area?”

In light of the above questions, further research could help facilitate a more standardised approach into how psychological aspects are incorporated within physiotherapy training and practice. Conversely it could be argued that some experienced physiotherapists feel they develop a ‘psychological appraisal’, which is based on the subjective assessment and observing the patients behaviours following their standard assessment and the way in which the physiotherapist attempts to help the patient regain function (Watson, 2013). This highlights that physiotherapists give the impression of having some interest in psychology, but they appear to lack the confidence and/or understanding to effectively utilise psychological techniques which are within the scope of physiotherapy practice.

The Physiotherapist Pain Association (PAA) have undertaken research into the psychological management of patients with musculoskeletal pain who are typically managed by physiotherapists (Watson, 1999). Moreover the PAA have designed physiotherapy-specific assessments which can be used to assess the psychological wellbeing of patients (Watson, 1999). It has been recommended by the PPA that patients who fail to attend physiotherapy or who are still symptomatic despite taking prescribed pain medication by their GP should have a psychosocial assessment by a physiotherapist. However, this approach has not been fully implemented due to as lack of confidence and or lack of formal training in psychology.

Research has highlighted that physiotherapists are using a range of psychological techniques such as cognitive behavioural therapy (CBT; and neuro-linguistic programming (NLP), goal setting, imagery and positive self-talk (Karunaratne, 2010). As mentioned previously there are certain physiotherapy disciplines, including chronic pain, ACL reconstruction, neurology and sport where the use of such psychological interventions appear to be particularly prevalent.

3.7 Areas of physiotherapy where psychological approaches are being incorporated

3.7.1 Chronic Pain

Chronic low back pain and general chronic pain have dramatically increased in recent years it has been referred to clinicians for years and have been described as a 20th century health care disaster (Waddell, 1987, 1992). There has been a change in the way chronic low back pain has been managed over the past three decades. Since the 1980s there has been an increasing trend towards moving from a traditional physiotherapy biomedical approach to broader management approach which includes psychological and social aspects of the wellbeing of patients (Woby, Roach, Urmston, & Watson, 2008). The term biopsychosocial became a popular term to physiotherapists who were treating patients with chronic pain (Waddell, 1987). According to Alonso (2004) the biopsychosocial model depicts a health care concept that has evolved in close association with current pain theory. It has sought coexistence with the dominant biomedical model of health care. the biopsychosocial model states that ill health and disease are the result of an interaction between biological, psychological and social factors (Engel, 1977). This has subsequently influenced physiotherapists who work with patients with chronic pain, to increase their understanding surrounding the biopsychosocial aspects of pain. As patients' attitudes and beliefs influence treatment adherence, musculoskeletal therapists should be aware that focusing on the biomedical model for chronic musculoskeletal pain is likely to result in poor self-efficacy and patient outcomes (Nijs, Roussel, Paul van Wilgen, Köke, & Smeets, 2013).

Using a biopsychosocial model as part of physiotherapy management for chronic pain has been shown to be effective in improving exercise participation, reducing pain and increasing overall function (Vibe Fersum, O'Sullivan, Skouen, Smith, & Kvåle, 2013).

Vibe Fersum et al. (2013) conducted a randomised controlled trial where one group of low back pain patients received cognitive biopsychosocial treatment and manual therapy and were compared to the other group who received traditional manual therapy. The results demonstrated that the biopsychosocial group showed greater improvements in pain scales, exercise class adherence and disability function index scores (Vibe Fersum et al., 2013). This highlights the importance of integrating biopsychosocial models into the physiotherapy management of chronic pain. Unfortunately, the majority of physiotherapists have only tended to receive biomedical-focused training/education as opposed to biopsychosocial training (Nijs et al., 2013). More recent evidence by Sanders et al. (2013) suggests that physiotherapists may still be poorly prepared to address the challenges presented by patients with low back pain, including the expectation that they provide a more patient focused and broader biopsychosocial approach to care. This may imply a need to further prepare physiotherapists with the underpinning theoretical knowledge of psychological interventions and or assessment so that they can competently incorporate such approaches within more traditional treatment methods. Further research into identifying appropriate psychological training approaches for undergraduate and post graduates physiotherapists could overall improve the confidence of the majority of physiotherapists who do not feel confident to use such methods.

3.7.2 Neurology

Common physiotherapy approaches used in neurology are physical and hands on approaches such as Bobath and functional training (Sackley & Lincoln, 1996). This is supported by a study by Lennon (2003) which involved a survey investigating the most common treatment interventions used by physiotherapists in stroke. The results showed that the most common interventions were the promotion of normal movement, the control of tone, the promotion of function, and the optimisation of compensatory movements

(Lennon, 2003). Patients with neurological disorder or condition not only present with physical issues but also experience psychological problems, the most common namely of which is depression (Williams, Ghose, & Swindle, 2004). Therefore the psychological well-being of the patient is of paramount importance when conducting a neurological physiotherapy assessment. This was corroborated by Nielson et al. (2014) who explored the role of physiotherapists working with patients with neurological disorders and recommended that physiotherapy treatment is based on a “biopsychosocial aetiological framework”. Treatment should address illness beliefs, self-directed attention and abnormal habitual movement patterns through a process of education, movement retraining and self-management strategies, within a positive and non-judgemental context. Some physiotherapists have undertaken post graduate training in psychological techniques such as cognitive behavioural therapy (Brunner, De Hart, Minguet, Baldew, & Probst, 2013) and neuro linguistic programming (Karunaratne, 2010), one the most common psychological tools used in this area is goal setting (Arvinen-Barrow, Penny, Hemmings, & Corr, 2010a). A study by Reid and Chesson (1998) investigated goal attainment scaling (GAS) in physiotherapy and found that goals set by physiotherapists tended to be a physical activity related goal, whereas patients' goals were most commonly function-related activities. Patients failed to reach their expected levels more frequently for their self-set goals than for physiotherapist-determined goals. This would suggest that goals appear to be weighted towards being physiotherapist mandated and not patient led. Further examination into goal attainment and goal acceptance would be of value in improving understanding in this area.

3.8 Conclusion

This literature review has highlighted a number of key findings. It would appear that SMART goals are a dominant feature within clinical practice and is an attractive tool due

to its simplicity (Levack, Dean, McPherson, & Siegert, 2014). However, goal setting is in fact extremely complicated and the relationship between goals, mood, motivation and other types of theoretical models make it incredibly challenging (Levack et al., 2014). Therefore it would be reasonable to suggest that one goal setting approach may not fit all. It is clearly evident that goal setting is effective in improving self-efficacy, treatment compliance, improved self-regulation, improved team working and overall patient outcomes (Evans & Hardy, 2002; Levack et al., 2006b). In contrast, the literature has also outlined a number of reported issues associated with goal setting. These issues are poor patient compliance (Bassett & Petrie, 1999), anxiety (Jack et al., 2010), poor communication (Parry, 2004) and goals not being patient centred (Leach et al., 2010). The literature has indicated that there is a potential training issue where psychology training (including goal setting) is minimal and inconsistent (Heaney, Alison, et al., 2012). Therefore it could be argued that for goal setting practices used within ACL rehabilitation to be improved as a scientific treatment tool, it would require physiotherapists to understand the conceptual and theoretical aspects of goal setting, in which further exploration in to how physiotherapists use goals and their understanding of goal setting may provide valuable insight and possibly help identify a specific training strategy.

Chapter 4

**Physiotherapists' perceptions of goal
setting strategies used in ACL
rehabilitation**

Chapter 4 - Physiotherapists' perceptions of goal setting strategies used in ACL rehabilitation

4.0 Introduction

4.0.1 Anterior cruciate ligament injuries

Anterior cruciate ligament injuries (ACL) are common in both the sporting population (Schwab Reese et al., 2012) and the non-sporting population (Joseph et al., 2008). Furthermore they frequently necessitate surgical reconstruction (Collins, Katz, Donnell-Fink, Martin, & Losina, 2013). Typical mechanisms of injury that are associated with ACL injuries are contact, predominantly from sporting collisions, and non-contact, which involve rapid deceleration, directional cutting movements and pivoting in a weight bearing position (Alentorn-Geli et al., 2009). Research has revealed that the incidence of ACL injuries is over 200,000 per year in the United States (Meisterling, Schoderbek, & Andrews), making it one of the most common injuries of the knee (Kapoor, Clement, Kirkley, & Maffulli, 2004). From an injury prevalence perspective, Prodromos, Han, Rogowski, Joyce, and Shi (2007) reported that the female-male ratio of ACL injury is as high as 9:1. This has been linked to altered arthro-kinematics and neuromuscular characteristics in women (Rozzi, Lephart, Gear, & Fu, 1999). From a return to sport view point, only 65% to 70% of athletes return to their pre-injury level of sports activity following ACL reconstruction. This poor rate of return was further supported by Kate E. Webster et al. (2008), who reported 50% of athletes do not return to their pre-injury level of sport following ACL surgery, despite being fully rehabilitated. Psychological factors such as anxiety, depression and a fear of re-injury may contribute to this performance disparity (Brand & Nyland, 2009). There are significant cost implications associated with ACL surgery, with an estimated cost of £4,500 per patient (including rehabilitation) in the UK (Wilson et al., 2010) adding to the constant financial drain on NHS resources.

Therefore the need to investigate potentially cost reducing rehabilitation interventions following ACL surgery is of paramount importance.

4.0.2 Psychological symptoms associated with ACL injuries

Patients who undergo ACL reconstructive surgery not only experience physical symptoms, for example reduced range of movement, reduced muscle strength and reduced function (Thomee et al., 2006), but also psychological distress such as anger, depression, anxiety, tension, fear, and decreased self-esteem (Schwab Reese et al., 2012). Hemmings and Povey (2002) surveyed 179 chartered physiotherapists regarding the psychological content of their practice and found physiotherapists perceived stress and anxiety to be the most common psychological symptoms of athletes who have experienced which were specific to ACL injuries. Furthermore, psychological symptoms in particular anxiety have also been said to cause or exacerbate physical/ physiological symptoms. For example, McNulty, Gevirtz, Hubbard, and Berkoff (1994) reported a significant increase in EMG muscle activation in patients who suffered from anxiety. ACL rehabilitation programmes are commonly between six to nine months in duration (Beardshaw, Penhaul, Kennedy, Clayton, & Wheeldon, 2012) and involve predominantly involve exercise based interventions such as gait re-education, active range of movement, isotonic and neuromuscular training (Potter, 2006). In addition, depending on the level of sport and contact involved, returning to high contact sport can take up to a year in duration (Heijne, Axelsson, Werner, & Biguet, 2008). Because ACL rehabilitation is considered to be a lengthy process (J. Kvist, 2004), depression was another common psychological symptom found in patients, more so in competitive athletes (Morrey, Stuart, Smith, & Wiese-Bjornstal, 1999). Moreover poor patient adherence was reported to be a common psychological symptom during ACL rehabilitation (Pizzari, Taylor, McBurney, & Feller, 2005). The aforementioned has been linked with poor pain tolerance, low self-

motivation and appointment scheduling issues (Brewer, 1998). Despite the psychological symptoms that can occur following ACL surgery, the use of psychological interventions addressing these problems is inconsistent within physiotherapy practice. Exploring why psychological interventions are not consistently used during ACL rehabilitation would therefore be extremely valuable.

According to Parry (2004), goal setting aims to facilitate patient's motivation, co-operation and understanding of their rehabilitation. Goal setting was originally designed as a framework for predicting, explaining and influencing individuals' motivation in the workplace (Locke & Latham 1984). Goal achievement or attainment became successful in the work-place, therefore goal setting strategies were later applied in the healthcare and sports environment (Locke, 1985). Of the numerous goal setting approaches available, the most predominantly used in health care is SMART based goals (Playford et al., 2000). Therefore, general goals need to be relevant, positively defined, understood by the patient, attainable and achieved in an appropriate timeframe (Schut & Stam, 1994) .

There are a number of theories that underpin the notion of goal setting as previously discussed in chapter three. Scobbie et al. (2009) systematically reviewed theories that are linked with goal setting and found that three theories (social cognitive theory, goal setting theory and health action approach) significantly inform the way clinicians use goal setting. This would imply the importance of understanding the underpinning theory of goal setting when applying a goal setting framework. SMART goals are said to be simple in terms of formulating the goal, time effective and objectively focussed (Parry, 2004). Despite this, there is a degree of controversy surrounding the effectiveness and implementation of goal setting strategies in healthcare practitioners (Levack et al., 2006b). An example of this was demonstrated by Hemmings and Povey (2002) who conducted a survey involving

qualified physiotherapists. The results revealed that goal setting was reported to be the most effective and commonly used psychological intervention, however it was reported that 49% of patients do not achieve goals. This highlights possible issues with the implementation or attainment of goals. Other goal setting approaches which are being used in the sports environment are known as outcome, process and performance goals (previously discussed in chapter three) (Taylor & Wilson, 2005). An outcome goal focuses on winning a competition (Kingston & Hardy, 1997). Performance goals are similar to outcome goals but they are more personal, for example completing a cycle race in a certain time (Filby et al., 1999). Finally process goals focus on improving form, strategy and technique. A series of process goals must be set in order to attain a performance goal, for example ensuring appropriate alignment during kicking the ball (Kingston & Hardy, 1997). These goal setting processes used in sport have been empirically proven to improve athletic performance compared to a 'do your best' approach (Kyllo & Landers, 1994).

Other goal setting practices include an approach called goal attainment scaling (GAS). GAS is often used in conjunction with SMART goals. For every stage of the process of setting a SMART goal, incorporating GAS can allow the activity to be targeted, identify the support required to achieve the goal and allow quantification of the performance and time to achieve the goal (Bovend'Eerd, Botell, & Wade, 2009). In addition other levels can be easily and quickly formulated by adding, deleting and/or changing one or more of the (sub) parts (Leach et al., 2010).

Psychological interventions are considered to be important treatments to aid in the recovery from injuries (Heaney, Alison, et al., 2012). Incorporating psychological interventions such as goal setting, positive self-talk and imagery has been showed to

positively improve patient outcomes and adherence to ACL rehabilitation protocols (Scherzer et al., 2001). This could be a result of patients being given control over their rehabilitation, which may make them more likely to adhere and succeed (Scherzer et al., 2001). Goal setting in particular was shown to improve adherence to treatments including prescribed home exercise programmes (Evans & Hardy, 2002). This could help lower demands on NHS resources. There are a number of psychological techniques that are currently used in ACL rehabilitation; however these are only used by some physiotherapists (Schwab Reese et al., 2012). These techniques include relaxation (Cupal & Brewer, 2001), imagery and goal setting (Hemmings & Povey, 2002). Goal setting, in a study by Arvinen-Barrow et al. (2010a), physiotherapists reported feeling that they delivered goal setting effectively and it was one of the most common psychological techniques physiotherapists used with patients. When they were questioned regarding any issues associated with goal setting, adherence and poor motivation were common issues. Considering physiotherapists from the study appeared to be effective at goal setting, paradoxically issues with adherence and motivation certainly would warrant future studies exploring the implementation of goal setting amongst physiotherapists.

4.0.3 Important goal setting processes

There are a number of important goal moderators where patients who are fully committed to their goals are more likely to achieve them (Klein, Wesson, Hollenbeck, & Alge, 1999). Goal commitment is especially important when goals are difficult or challenging to achieve (Erez & Zidon, 1984). Educating the patient as to why goal attainment is important is said to increase goal commitment (Locke & Latham, 2002). Self-efficacy has also been shown to enhance goal commitment (Bandura, 1994). Using positive reinforcement and motivating or persuasive techniques to increase the confidence or empowerment of patients, increases goal commitment (White & Locke, 2000).

Feedback during the goal setting process is seen as a vital moderator in relation to raising motivation and goal attainment (Bandura & Cervone, 1983). Without appropriate feedback, patients would appear to find it very difficult to adjust their level of performance in order to align to what the goal requires (Locke & Latham, 2002). Even if a goal is agreed by the therapist and patient, providing summary or progress feedback can be used as a reference point to give meaning of the patients' current status, which subsequently may cause psychological or physical changes in order to achieve the goal (Locke & Latham, 2006). The type of feedback and how often feedback is provided to the patient may also influence the level of control the patient feels he or she may have. For example if patients were to observe progress (visual feedback), this could be more effective than just verbal feedback alone (Wulf, 2007). This may be particularly useful for patients following ACL surgery as rehabilitation is structured in phases (Myer, Paterno, Ford, Quatman, & Hewett, 2006); therefore receiving feedback after each phase may enhance self-efficacy and motivation.

Task complexity and specificity are other moderators to goal attainment/ success. Research has revealed that the higher and more specific the goal is, the higher the performance output (Wood, Mento, & Locke, 1987). This may be due to goals which are easily attainable often lead to less than optimal performance, which can negatively affect the patient, especially if they are a high level sports performer (Locke, 1985). However subsequent scientific literature suggests that, although setting higher goals helps patients perform better, achieving higher goals makes patients feel subjectively worse (Freshman & Guthrie, 2009). This apparent goal setting paradox is evident in numerous studies in which goals that were set at a higher level were only moderately or minimally effective regarding patients achieving goals (Burton et al., 1998; Weinberg et al., 2000) One

potential explanation for this, is that once the higher goal has been attained, changes in the autonomic system may cause a feeling of deflation (Wilson & Gilbert, 2005). Autonomic changes such as to include reduction in brain singling activity, decreased systolic and diastolic pressure and a reduced heart rate (Herbert Benson & Klipper, 1992). One approach that has been used to reduce these negative changes is by using mindfulness. Mindfulness may allow the therapist to become mindful of patients emotions who achieve high goals and therefore may make those emotions less noticeable or pass quickly (Freshman, Hayes, & Feldman, 2002). In addition, mindfulness can provide feedback about what may work for a given individual to help improve well-being (Brach, 2008). From an ACL perspective, low mood is a common symptom post ACL reconstructive surgery (Morrey et al., 1999). Therefore future research exploring the goal setting paradox for patients following ACL surgery may provide further guidance on a more effectively way to set goals.

There are a number of reported benefits of using goal setting. One of the key benefits of goal setting is that it positively changes the patients' behaviour by increasing their motivation (Wade, 2009). Another benefit is that the actual rehabilitation process can be monitored more closely due to the objective outcomes specified during formal goal setting (Wade, 2009). Psychologically, goal setting has been shown to reduce anxiety and it may provide the patient with valuable insight in to the acceptance of limited recovery (Playford, Siegert, Levack, & Freeman, 2009). From an adherence to treatment perspective, goal setting has been shown to improve adherence in a study that investigated patients experiencing low back pain (Coppack, Kristensen, & Karageorghis, 2012). Considering adherence issues are a key concern in ACL rehabilitation (Brewer et al., 2000), the effective implementation of goal setting could be beneficial in possibly improving adherence rates.

There are a number of issues associated with goal setting. One of the issues with goal setting is goal commitment. Goal commitment is a vital aspect of the goal setting process and if not effectively incorporated, issues can occur. Goal commitment includes external factors such as external reward and peer influence, internal factors such as expectancy and internal rewards and interactive factors such as participation and competition (Locke, Latham, & Erez, 1988). Not establishing goal commitment is linked to causing issues with task performance (Klein et al., 1999). In addition, one issue reported in a study by Playford et al. (2009) reported that if all elements of a particular goal setting strategy are not fulfilled, then this could reduce the likelihood of attainment and therefore exacerbate psychological distresses. Scobbie et al. (2009) investigated a goal setting process that encompasses various aspects of goal related theories. This goal setting process included other factors for example the actions that initiate goal setting process, target the behaviours are in relation to the desired goal, identifying what mediators predict or influence the relationship to the goal related behaviour and outcome exploring the feedback processes of goal setting. This highlights the importance of ensuring that goal setting meets all the required processes to achieve optimal effects. Future qualitative research examining goal setting practices would provide insight as to whether further training is required to enable physiotherapists to be more effective when using goal setting interventions in clinical practice.

4.0.4 Implementation of goal setting

There are various ways in which goals are set. These are patient focussed goals, collaborative goals and physiotherapist mandated goals. Patient or client centred goals have become the basis of healthcare and delivery of therapeutic services (Cheryl Cott, 2004); however there are still ongoing concerns as what is deemed as 'client centred'. Cheryl Cott (2004), investigated patients' perceptions regarding client centeredness in chronic obstructive pulmonary disease (COPD) rehabilitation and found that patients perceived that their goals were moulded in to pre-set goals from previous goal setting experiences. Patients also felt that there was not enough education in relation to prepare patients to play an active role in their clinical treatment options. Moreover, patients felt they were not fully involved enough when it came to defining their needs, goals and outcomes to strive towards (Cheryl Cott, 2004), suggesting that the client centred approach is not being maximised to its full potential. Using a client centred approach has been shown to be effective in enabling patients to take an active role in setting goals, which subsequently caused them to recall their goals more easily, work towards more meaningful goals and be able to manage themselves more effectively once their rehabilitation program is complete (Rogers, 2012).

Collaborative goal setting is a common approach used by allied health professionals (Arnetz, Almin, Bergström, Franzén, & Nilsson, 2004), where both the therapist and patient play an integral part in setting mutually agreed goals. Collaborative goal setting has been shown to have a number of benefits, which might increase patient satisfaction, improved patient adherence to treatment and decreased length of stay or rehabilitation duration (Arnetz et al., 2004). Despite these benefits there are reported concerns with collaborative goals in which patients are minimally involved or not involved at all (McClain, 2005). Recent empirical evidence suggests that collaborative goal setting

should move from a medical focussed approach (e.g. therapist setting more objective goals) to a more biopsychosocial approach where the patient is empowered to setting their goals (Lenzen et al., 2016).

4.0.5 Psychological training amongst physiotherapists

Research has demonstrated a growing interest into the role of physiotherapists in providing psychological support to patients within rehabilitation (Arvinen-Barrow et al., 2010a); however, there is a paucity of literature that surrounds patients following ACL reconstruction. Jevon and Johnston (2003) state that very few physiotherapists have access to a sports or health psychologist, so providing psychological support often then becomes the responsibility of the physiotherapist (Arvinen-Barrow et al., 2008). From an education perspective, Kolt and Andersen (2004) found that physiotherapists are very rarely provided with the underpinning theory and skill set to adequately deal with patients who display psychological symptoms. This was further substantiated by Arvinen-Barrow et al. (2010a) who investigated psychology training within physiotherapy undergraduate programmes in the United Kingdom and reported a significant lack of consistency in psychology training. This suggests not all physiotherapists are provided with the necessary psychological tools to integrate in to a rehabilitation programme. Furthermore, a number of studies have shown that physiotherapists do not feel adequately equipped to deal with the psychological impact of injury and to effectively use the psychological tools that are within the scope physiotherapy (Gordon, Potter, & Ford, 1998). Despite studies that recognise that psychological interventions play a substantial role in ACL rehabilitation and other injury management programmes (Cupal & Brewer, 2001), there appears a lack of consistency amongst physiotherapists who were provided with formal psychological training and physiotherapists who have developed an understanding

through experiential learning. Therefore the central aim of this study was to explore physiotherapists' perceptions of using goal setting strategies in ACL rehabilitation.

4.1 Method

Prior to the commencement of the survey, the study received full ethical approval from the University of Hull Ethics Committee on the 12th of August 2015 (see Appendix A).

4.1.1 Participants

One hundred and twenty four (n=124) UK Chartered Physiotherapists currently practicing in the United Kingdom, were identified from an internet search. This search consisted of trawling physiotherapy related forums and networking sites such as physio room, interactive CSP forum site, sports physiotherapy forum as well as emailing contacts from networking at physiotherapy conferences and events. The sample comprised of fifty three males (n=53) and seventy one female (n=71). From a discipline specific area perspective, 39.1% chartered physiotherapists worked in the National Health Service (NHS), 25.8% worked in private practice, 14.6% worked in the sporting environment, 11.3% worked in education, 4.6% worked in the private hospital sector, 0.7% worked for the Ministry of Defence and 6% worked in other areas such as legal and locum related work. All participants reported treating patients who had undergone anterior cruciate ligament reconstructions (ACL). A total of one hundred and thirty one participants expressed an interest following an invite from the researcher. Out of the one hundred and thirty one participants, one hundred and twenty four fully completed the survey. The other six participants were not contactable following their initial interest. The profile characteristics including information pertaining to employment status, years of experience, level of qualification and place of employment is shown in Table 1:

Table 1: Profile percentages of the chartered physiotherapists included in the study

Characteristic	Value
Male	42.7
Female	57.3
Age range	21 – 70 years
Education	
Diploma	11.3
Bachelor's	71.8
Master's	16.9
Doctorate	0
Grand Parenting	0
Years qualified	
0-5 years	19.4
6-10 years	21
11-15 years	24.2
16-21 years	19.4
21+ years	16.1
Place of employment (%)	
NHS	39.1
Private Hospital	4.6
Sports environment	14.6
Private practice	25.8
Education setting	11.3
Ministry of Defence	0.7
Other	4

*Participants may be employed at more than one site

4.1.2 Instrument

Three previously published surveys were reviewed and considered in the design of the survey using the online Bristol Online Survey (BOS) (Hemmings & Povey, 2002, Lafferty et al. 2008, Playford et al. 2009, Heaney et al. 2012). Hemmings and Povey (2002) investigated the views of chartered physiotherapists on the psychological content of their practice. The survey was a paper based questionnaire and was mailed out to 179 chartered physiotherapists in the East England Sports Medicine Directory. The questionnaire was a slightly adapted version of the The Physiotherapists and Sport Psychology Questionnaire (PSPQ) which was an adapted version of the Athletic Trainer Sports Psychology Questionnaire (ATSPQ). The survey contains 8 questions which were a combination of five point Likert scales, yes no answers and free text answers. The slight modifications were exchanging American terminology 'Athletic Trainer' to more UK terminology 'Sports Physiotherapist'. A 50 percent response rate resulted in 90 completed questionnaires (67 women and 23 men). The results were analysed using descriptive statistics and reported that stress, anxiety, depression were the most common symptoms athletes experienced. These psychological symptoms were correlated with poor goal setting, unmotivated, impatience and non-compliance. The perceived most important therapist strategies in assisting with athlete symptoms were setting goals, understanding athlete motivation and creating variety within rehabilitation. The surveys limitations was that the response rate was only 50% as according to Scanlan et al. (2018) a responsive rate of 85% would enable a more detailed form of analysis to be conducted. The population to which the survey was mailed to was only one specific region of England. A much larger scale survey including all regions of England may have provided some differences in the data set. The study did not provide clarity when it came to each stage of the analysis in particular the analysis of the free text answers, possibly lowering its internal validity.

Lafferty (2008) conducted a survey involving club based and non-club based physiotherapist opinions of their psychology content when treating sports injuries and rehabilitation. The survey used the Athletic Trainer Sports Psychology Questionnaire (ATSPQ) which was the same survey as Hemmings study and the same modifications (exchanging American terminology for UK terminology) was the same. A total of 87 physiotherapists (45 non-club and 42 club based physiotherapists) completed the survey package. The survey was mailed out to 150 clubs in the North West of England including rugby and football clubs. The response rate was 50% and a variety of statistical analysis was used to reflect the nature of the questions including independent *t*-tests, MANOVA and cross tabulations of basic demographics were conducted. The results were very similar to Hemmings study including highly rated psychological symptoms and strategies including goal setting, effective communication and variety during rehabilitation were identified. The key difference to this study was that non-club based physiotherapist appeared to be more bio-psychologically aware than club based physiotherapists. This may infer the exposure non-club physios have in relation to NHS, private hospitals. Similar limitations regarding target population, response rate and lack of clarity regarding the analysing free text answers could have been more explicitly written. A potential pattern of both of these studies employing a specific mail shot may have been one explanation to the poor response rate and the use of paper copy. The ease of completing on online survey versus returning a paper survey was a consideration in the design of the survey for this thesis.

Playford et al. (2009) conducted a delphi report consisting of 24 professionals including physiotherapists, nurse practitioners, occupational therapists and social workers. The study involved the 24 participants attending a conference on goal setting followed by the expert panel discussing specific aspects of the topic. The questions used to facilitate

discussions were based from a literature search and included questions on; discussing the acronym SMART goals, what is patient centeredness, goal setting strategies used by the team. The conversations were audio recorded and transcribed verbatim. An inductive approach generated key themes including whether goal setting directly results in improved patient outcomes, facilitating the patient during the goal setting process, understanding the specific components of goal setting and relationships between goal planning and attainment. The results from the deli report indicate that there is a significant degree of controversy surrounding an agreed approach to setting goals, having a more theoretical understanding on goal setting and how to best support patients through the goal setting process. There were some methodological queries in relation to this study. A professional transcriber was used to record the data set. Having the primary researchers transcribe the data set may allowed a number of memo notes, audit trail which may have assisted with the different stages of analysis. Not having a co moderator may have allowed nuances, utterances and other non-verbal observations to have been recorded, again which may have provided an angle to view the data set from.

Heaney, Green, et al. (2012) conducted a mixed method study involving 17 UK universities who provide physiotherapy BSc and MSc pre-reg programmes. The study design was a telephone semi-structure interview design. 4 out of the 17 universities were not able to partake in the telephone interview which resulted in an online version of the interview. The survey aimed to investigate the amount of psychology education being delivered within UK physiotherapy programmes. The survey used thematic analysis using an inductive approach and online questionnaires were analysed using descriptive statistics where demographic details were cross tabulated to observe any difference across the data set. The results reported a significant disparity regarding the amount of psychology currently being delivered. These inconsistencies highlight the need to call for a review of

physiotherapy curricula to ensure that a standardised approach is used to ensure all graduates are being provided with adequate psychology education. The methodological quality of this study was robust in that transparency was evident during the qualitative analysis. The analysis of the questionnaire version could have been made more clear to determine how words were given a numerical value before being cross tabulated with other data. Exploring whether higher ranked universities included more psychology than less ranked universities would have been insightful.

The survey (see Appendix B) aimed to measure perspectives of physiotherapists with regard to the use and understanding of goal setting strategies for patients following ACL surgery. The survey had considered the design of the questions used in the aforementioned. The instrument contained three themes based on training and education background (did they receive any formal training on goal setting), their understanding of the psychological symptoms that are associated with ACL surgery (recognition of symptoms, frequency of psychological symptoms) and perceptions of goal setting strategies employed in ACL rehabilitation (SMART, process, progress and outcome goals). The survey contained a total of 20 questions. Included was a variety of open and closed questions to gain valuable insight into the goal setting aspect of physiotherapist's work. To measure responses effectively and efficiently, the survey included five types of one-line answers, multiple-choice answers, five-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree), and single-choice answers. Questions and themes of the survey are shown in Table 2: Survey themes and questions.

Table 2: Survey themes and questions

Themes	Survey Questions
1 Demographic Details	<ul style="list-style-type: none">• What qualification did you obtain to become a Health and Care Professionals Council (HCPC) Registered Physiotherapist?• Gender?• Age?• Number of years qualified as a chartered physiotherapist?• Main place of work?
2. Psychological considerations for patients	<ul style="list-style-type: none">• What proportion of patients do you feel have experienced psychological symptoms following ACL surgery?• What psychological symptoms have patients presented with following ACL surgery?• How important do you feel it is to address the psychological well-being of a patient who has undergone ACL surgery?
3. Goal Setting and Training	<ul style="list-style-type: none">• Being able to effectively set goals is a requirement outlined in the HCPC Standards of Proficiency, therefore can you describe goal setting?• Which goal setting strategies do you use for patients following ACL surgery?• What is the purpose of using goal setting strategies? (improve patient function, attendance, adherence)• Please indicate how strongly you agree that goals set following ACL surgery are focussed on the specified factors by selecting one option from each row (objective focused, function, psychologically focused)• How would you know goals set are meaningful to the patient?• Have you ever experienced any issues relating to goal setting in patients following ACL surgery?

Themes	Survey Questions
	<ul style="list-style-type: none"><li>• There may be times when a patient does not achieve a goal, can you describe what you would do if your patient does not achieve their goal?<li>• How confident do you feel in implementing a goal setting programme for patients following ACL surgery?<li>• Have you ever received any training on goal setting?<li>• How was your training delivered? (University, self-taught, online CPD, on the job)<li>• Do you feel that student physiotherapists should receive more training on goal setting?<li>• As a chartered physiotherapist, do you feel that higher level training on goal setting would be of benefit?<li>• Would you like to receive further training on goal setting?

4.1.3 Procedure

The survey was initially piloted to 10 randomly selected participants before going live on the 30th August 2015 and closing on the 30th of September 2015. The nature of the pilot survey enabled valuable feedback from the participants. Two thirds of the pilot participants requested for the goal setting and training theme question to be changed from do you think goals are meaningful to your patients? to How would you know goals set are meaningful to the patient?. In addition, seven of the 10 pilot participants requested for a question involving whether they felt students receive sufficient training on goal setting. In response to this request, a question was created (Do you feel that student physiotherapists should receive more training on goal setting?).

A letter of invitation included information about the research and the informed consent process. All invitations were electronically distributed via email to state registered physiotherapists who worked in the NHS, sport, private practice, education and private hospitals. Emails were sent to all regions of the UK to demonstrate a range of training backgrounds, disciplines of work and to highlight any geographical correlations. All invitation emails included an attachment of the link to the online survey. A consent statement was at the beginning of the survey so that participants were reminded that if they clicked yes, then this was accepted as consent. Survey inclusion criteria required that subjects completing the survey were Health and Care Professionals Council (HCPC) and Chartered Society of Physiotherapy (CSP) registered and that they had experience working with ACL patients.

4.1.4 Data Analysis

Data were initially screened for missing data and demographic variables examined. Open-ended responses were categorized by theme and words were coded numerically. Descriptive statistics consisting of gender, qualification, years qualified, and place of work were cross-tabulated to observe proportions. Chi-square was used to determine any

significant differences between the expected and observed data. Phi and Cramer's V was used to inspect associations between variables. Non-parametric tests were used to examine demographics effects. Specifically, a Mann-Whitney U test was used to explore gender effects, and Kruskal-Wallis test was used to examine effects of demographics variables with multiple categories (e.g., qualification level, years qualified). In all analyses, Benjamini-Hochberg q (Benjamini & Hochberg, 1995) was used to identify potential false discoveries in multiple comparisons. False discoveries were recognized and corrected for when $p > q$.

Any data obtained was stored on a University of Hull, password encrypted laptop and was in accordance with the research ethics university data protection act (Data Protection Act 1998). Only the researcher and research supervisor had access to the data. A copy of the original results generated from BOS are attached as appendix B. Supplementary tables that were used as part of the coding process are attached as appendix C.

Results 4.2

The major findings from the survey are presented in the following tables (Table 3 to Table 13 . Any additional processes that was undertaken prior to statistical analysis such as categorisation and coding are included as supplementary documentation (see appendix C).

4.2 Results

Table 3 - Percentage of respondents by demographic information using specific goal setting strategies (Q11)

	SMART Goals	Functional Goals	Short & Long Term Goals	Patient Focused Goals	Collaborative Goals	Other
<i>Gender</i>						
Male	39.6	39.6	15.1	15.1	5.7	7.5
Female	32.4	29.6	16.9	16.9	15.5	11.3
<i>Qualification</i>						
Diploma	14.3	35.7	21.4	21.4	7.1	14.3
BSc	34.8	38.2	16.9	16.9	13.5	6.7
MSc	52.4	14.3	9.5	9.5	4.8	19
<i>Years Qualified</i>						
0-5	60.9	21.7	21.7	0	8.7	8.7
6-10	53.6	32.1	7.1	17.9	0	10.7
11-15	27.6	44.8	24.1	13.8	10.3	6.9
16-20	16.7	37.5	8.3	16.7	29.2	8.3
21+	15	30	20	35	10	15
<i>Area of work</i>						
NHS	49.1	29.8	8.8	14	7	10.5
Sport	18.2	45.5	18.2	18.2	13.6	4.5
Private	44.7	39.5	15.8	21.1	10.5	2.6
<i>Practice</i>						
Education	38.9	33.3	16.7	16.7	11.1	5.6
Private	37.5	12.5	37.5	12.5	25	12.5
<i>Hospital</i>						
MOD	35.5	33.9	16.1	16.1	11.3	9.7
Overall	36	34.6	16	32	10.6	9.4
<i>Percentage</i>						

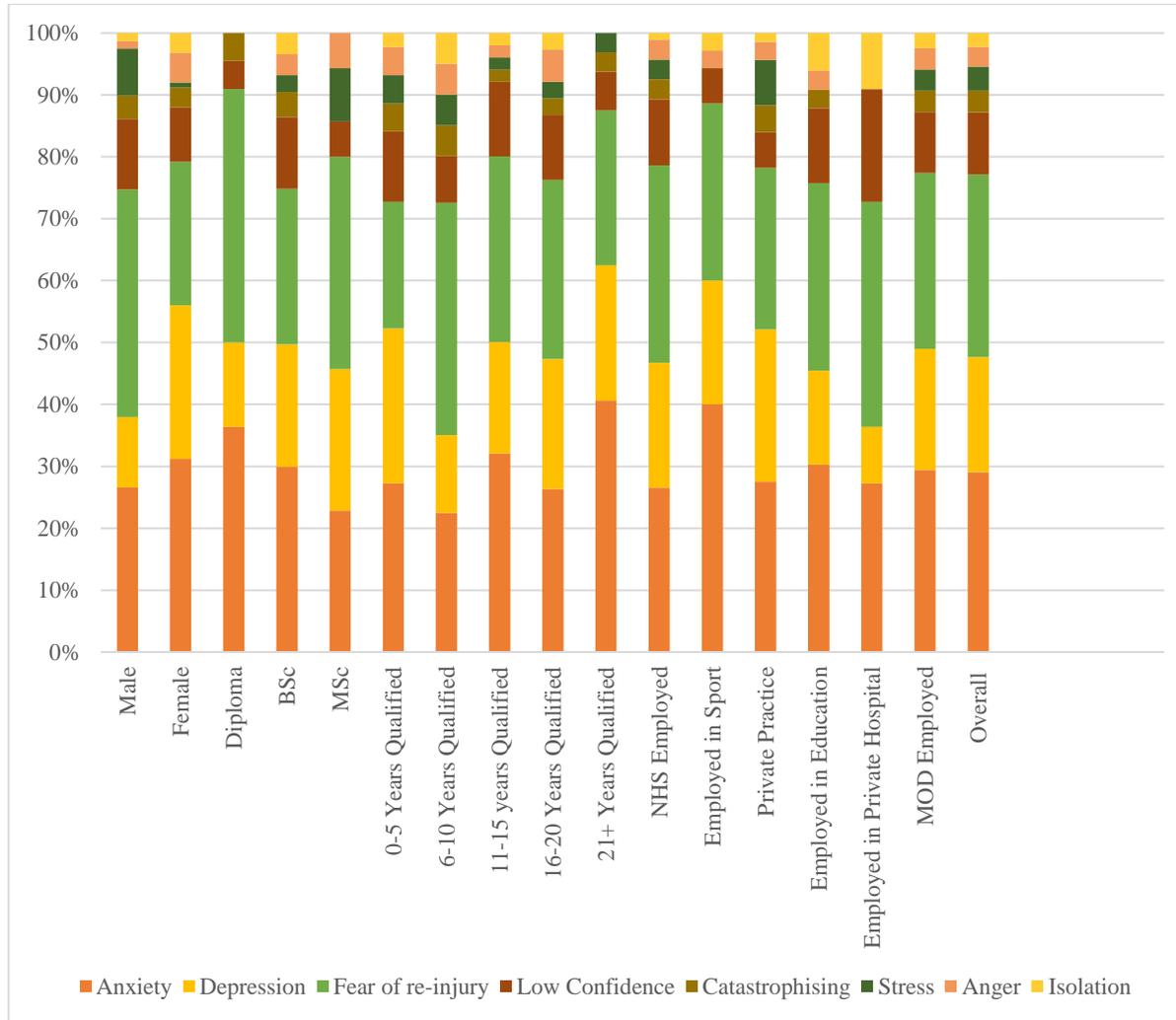


Figure 3: Percentage of respondents by demographic information identifying psychological symptoms associated with ACL surgery (Q8)

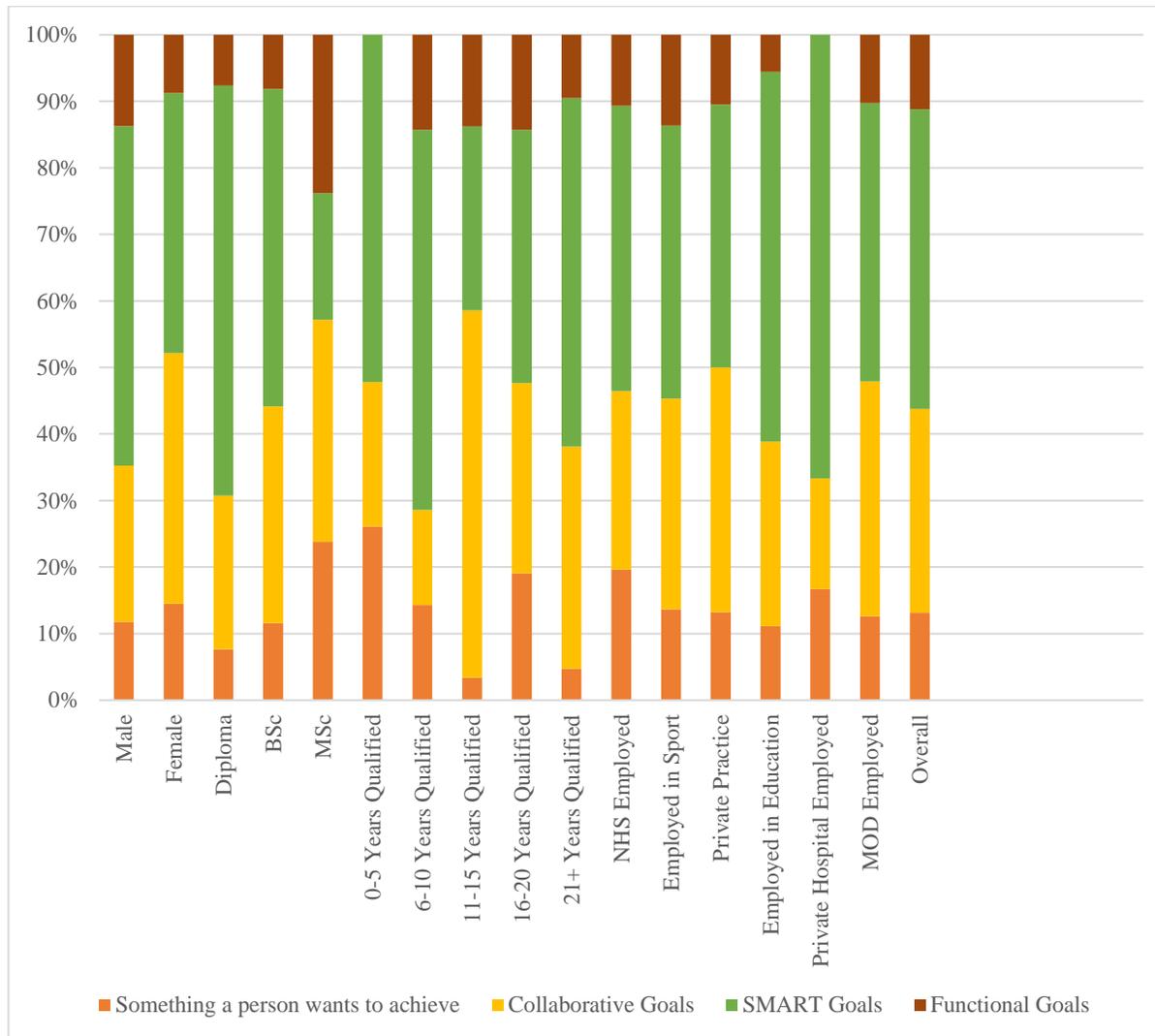


Figure 4: Percentage of respondents by demographic information describing goal setting (Q10)

Table 4: Percentage of respondents by demographic information stating the purpose of goal setting (Q12)

	Patient Adherence	Patient attendance	Improve Function	Improve Patient Confidence	Pain Reduction	Other
<i>Gender</i>						
Male	86.6	34	92.5	86.8	32.1	9.4
Female	85.9	46.5	84.5	90.1	39.4	15.5
<i>Qualification</i>						
Diploma	85.7	42.9	85.7	100	28.6	42.9 *
BSc	84.3	40.4	88.8	91	36	9
MSc	95.2	42.9	85.7	71.4	42.9	9.5
<i>Years Qualified</i>						
0-5	78.3	52.2	91.3	87	34.8	8.7
6-10	89.3	39.3	89.3	78.6	28.6	0
11-15	93.1	44.8	86.2	93.1	37.9	10.3
16-20	87.5	37.5	83.0	87.5	50	20.8
21+	80	30	90	100	30	30
<i>Area of work</i>						
NHS	89.5	49.1	89.5	82.5	38.6	12.3
Sport	90.9	31.8	90.9	95.5	45.5	4.5
Private Practice	84.2	28.9	86.8	84.2	26.3	7.9
Education	94.4	38.9	88.9	94.4	44.4	11.1
Private	75	25	87.5	75	25	25
Hospital						
MOD	86.3	41.1	87.9	88.7	36.3	12.9
Overall	86.2	40.2	88.5	88.4	35.7	12.4
Percentage						

*Other = Directs treatment and management, return to work/ sport, motivates patients, to have an end point, motivation

Table 5: Percentage of respondents by demographic information describing how they would know if goals are meaningful to a patient (Q14)

	Goals set by patient	Joint goal setting	Discussion with patient	Patient feedback
Male	38.5	30.2	22.6	11.3
Female	33.8	39.4	22.5	4.2
Diploma	24.1	42.9	28.6	7.1
BSc	36	32.6	22.5	9.0
MSc	38.1	42.9	19	0
0-5	39.1	26.1	21.7	13
6-10	32.1	25	35.7	7.1
11-15	41.4	41.4	10.3	6.9
16-20	37.5	41.7	16.7	4.2
21+	20	45	30	5
Area of work				
NHS	38.6	35.1	15.8	10.5
Sport	27.3	40.9	31.8	0
Private	36.8	36.8	18.4	7.9
Practice				
Education	38.9	33.3	22.2	5.6
Private	25	37.5	25	12.5
Hospital				
MOD	34.7	35.5	22.6	7.3
Overall	36.1	34.8	22.5	7.7
percentage				

Table 6: Percentage of respondents by demographic information identifying any issues related to goal setting (14a)

	Poor Adherence	Poor patient motivation	Poor Communication	Patient Overactive	Patient Setting Unrealistic Goals	Other
<i>Gender</i>						
Male	64.2	56.6	32.1	56.6	77.4	0
Female	52.1	35.2	15.5	52.1	69	1.4
<i>Qualification</i>						
Diploma	50	35.7	14.3	35.7	71.4	0
BSc	56.2	47.2	23.6	58.4	74.2	1.1
MSc	66.7	38.1	23.8	47.6	66.7	0
<i>Years Qualified</i>						
0-5	52.2	47.8	8.7	43.5	69.6	0
6-10	64.3	60.7	32.1	57.1	71.4	0
11-15	55.2	34.5	31	58.6	82.8	0
16-20	66.7	37.5	25	50	62.5	4.2
21+	45	40	10	60	75	0
<i>Area of work</i>						
NHS	66.7	40.3	22.8	63.2	77.2	0
Sport	68.2	59.1	18.2	63.6	63.6	4.5
Private Practice	44.7	50	23.7	55.3	76.3	0
Education	50	27.8	16.7	44.4	72.2	0
Private Hospital	37.5	12.5	25	25	37.5	0
MOD	57.3	44.4	22.6	54	72.6	0
Overall percentage	58.1	45.9	23.8	54.3	73.2	0.7

Table 7: Percentage of respondents by demographic information stating what they would do if a patient does not achieve a goal (Q14b)

	Discuss with patient	Adjust goal	Set easier goal	Refer patient on	Educate the patient	Confront the patient
<i>Gender</i>						
Male	34	26.4	20.8	5.7	9.4	3.8
Female	35.2	26.8	19.7	7	8.5	2.8
<i>Qualification</i>						
Diploma	14.3	28.6	14.3	7.1	21.4	14.3
BSc	40.4	24.7	22.5	4.5	6.7	1.1
MSc	23.8	33.3	14.3	14.3	9.5	4.8
<i>Years Qualified</i>						
0-5	43.5	34.8	17.4	4.3	0	0
6-10	35.7	21.4	25	7.1	3.6	7.1
11-15	37.9	24.1	20.7	6.9	10.3	0
16-20	33.3	29.2	16.7	8.3	12.5	0
21+	20	25	20	5	20	10
<i>Area of work</i>						
NHS	40.4	31.6	15.8	3.5	5.3	3.5
Sport	31.8	36.4	22.7	4.5	4.5	0
Private	34.2	26.3	21.1	7.9	7.9	2.6
<i>Practice</i>						
Education	38.9	27.8	16.7	5.6	5.6	5.6
Private	12.5	37.5	12.5	12.5	25	0
<i>Hospital</i>						
MOD	34.7	26.6	20.2	6.5	8.9	3.2
Overall	34.6	26.6	20.2	6.3	8.9	3.3
percentage						

Table 8: Percentage of respondents by demographic information stating type of goal setting training participants received (Q14e)

	No training	In-service training	On the job	University	Self-taught	Continual Professional Development
<i>Gender</i>						
Male	30.2	35.8	49.1	32.1	24.5	0
Female	29.6	31	39.4	35.1	25.4	2.8
<i>Qualification</i>						
Diploma	50	28.6	42.9	35.7	14.3	0
BSc	24.7	30.3	43.8	37.1	22.5	1.1
MSc	38.1	47.6	42.9	19	42.9	4.8
<i>Years Qualified</i>						
0-5	39.1	17.4	17.4	47.8	17.4	4.3
6-10	21.4	35.7	50	35.7	25	0
11-15	24.1	41.4	48.3	34.5	27.6	3.4
16-20	29.2	37.5	54.2	20.8	29.2	0
21+	40	30	45	30	25	0
<i>Area of work</i>						
NHS	31.6	35.1	45.6	29.8	24.6	3.5
Sport	27.3	31.8	63.6	22.7	40.9	0
Private Practice	31.6	31.6	36.8	42.1	18.4	0
Education	27.8	16.7	44.4	38.9	22.2	0
Private Hospital	37.5	25	37.5	37.5	25	0
MOD	29.8	33.1	43.5	33.9	25	1.6
Overall	29.9	33.4	44.2	33.6	24.9	1.4
percentage						

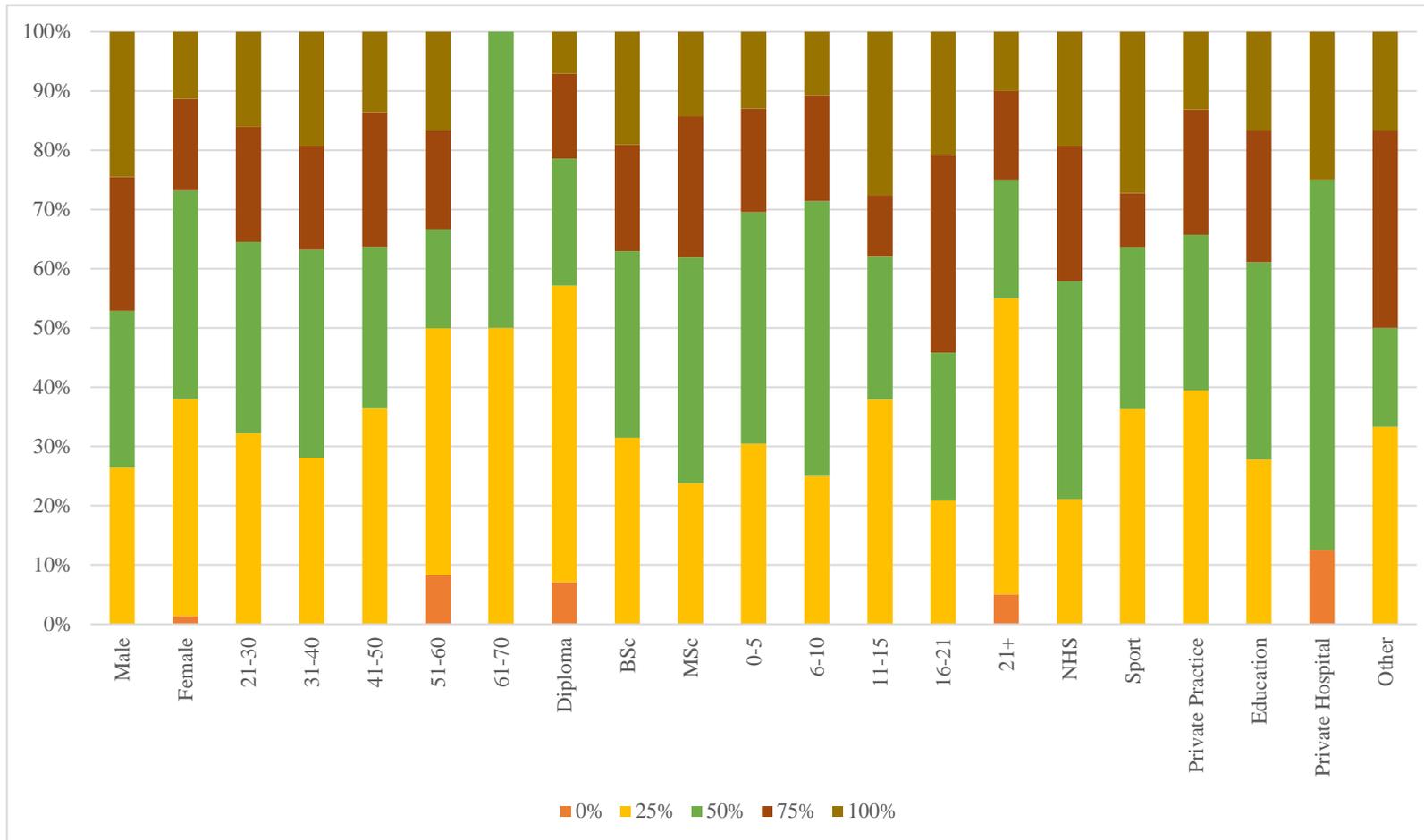


Figure 5: Estimated proportion of patients experience psychological symptoms as an effect of a range of demographics (Q7)

Table 9: Estimated proportion of physiotherapists that feel the importance to address the psychological well-being of patients following ACL surgery (Q9)

Variable	Mean	SD	Skew	Kurt	<i>p</i>
<i>Qualification?</i>					
<i>Diploma</i>	1.43	.51	.33	-2.24	
<i>BSc</i>	1.41	.69	1.85	3.47	.110
<i>MSc</i>	1.76	.89	1.46	2.25	
<i>Gender?</i>					
<i>Male</i>	1.35	.52	1.10	.12	.235
<i>Female</i>	1.37	.82	1.60	2.24	
<i>Years</i>					
<i>Qualified?</i>					
<i>0-5</i>	1.43	.50	.31	-2.10	
<i>6-10</i>	1.38	.73	2.24	5.40	.700
<i>11-15</i>	1.38	.58	1.28	.86	
<i>16-21</i>	1.60	.82	1.55	2.61	
<i>21+</i>					
<i>Work in NHS?</i>					
<i>Yes</i>	1.43	.66	1.67	3.26	
<i>No</i>	1.51	.77	1.75	3.10	.672
<i>Work in Sport?</i>					
<i>Yes</i>	1.55	.80	1.68	3.03	
<i>No</i>	1.46	.70	1.77	3.45	.656
<i>Work in Private Practice?</i>					
<i>Yes</i>	1.39	.64	2.06	5.98	.514
<i>No</i>	1.51	.75	1.63	2.59	
<i>Work in Education?</i>					
<i>Yes</i>	1.61	.78	1.70	4.19	.280
<i>No</i>	1.45	.71	1.77	3.28	
<i>Work in Private Hospital?</i>					
<i>Yes</i>	1.25	.46	.44	.00	.406
<i>No</i>	1.49	.73	1.70	3.01	
<i>Work in MOD?</i>					
<i>Yes</i>	0	0	0	0	.634 ¹
<i>No</i>	1.48	.72	1.72	3.15	
<i>Work in Other?</i>					
<i>Yes</i>	1.33	.82	2.45	6.00	.412
<i>No</i>	1.48	.71	1.74	3.35	

Table 10: Estimated proportion of physiotherapists indicating how strongly they feel that goals set should be objective based. (Q13.1)

Variable	Mean	SD	Skew	Kurt	<i>p</i>
<i>Qualification?</i>					
<i>Diploma</i>	4.07	.47	.31	2.92	
<i>BSc</i>	4.31	.97	-1.96	4.21	.054
<i>MSc</i>	4.14	.85	-2.43	9.32	
<i>Gender?</i>					
<i>Male</i>	4.23	.89	-1.83	4.82	.540
<i>Female</i>	4.28	.93	-2.03	5.02	
<i>Years</i>					
<i>Qualified?</i>					
<i>0-5</i>	4.30	.93	-2.19	6.68	
<i>6-10</i>	4.36	.73	-1.30	2.58	
<i>11-15</i>	4.03	1.21	-1.63	2.17	.862
<i>16-21</i>	4.33	.92	-2.23	6.88	
<i>21+</i>	4.30	.57	-.04	-.40	
<i>Work in NHS?</i>					
<i>Yes</i>	4.25	.91	-1.83	4.39	
<i>No</i>	4.27	.91	-2.04	5.39	.863
<i>Work in Sport?</i>					
<i>Yes</i>	4.18	1.10	-1.58	2.39	
<i>No</i>	4.27	.87	-2.04	5.80	.960
<i>Work in Private Practice?</i>					
<i>Yes</i>	4.34	.75	-2.32	9.93	.806
<i>No</i>	4.22	.98	-1.79	3.64	
<i>Work in Education?</i>					
<i>Yes</i>	4.50	.51	.00	-2.27	.358
<i>No</i>	4.22	.96	-1.85	4.03	
<i>Work in Private Hospital?</i>					
<i>Yes</i>	4.63	.52	-.64	-2.24	.224
<i>No</i>	4.23	.93	-1.89	4.41	
<i>Work in MOD?</i>					
<i>Yes</i>	0	0	0	0	.661 ¹
<i>No</i>	4.26	.91	-1.92	4.65	
<i>Work in Other?*</i>					
<i>Yes</i>	3.33	1.21	-1.10	3.66	.010
<i>No</i>	4.31	.87	-1.98	5.21	

*Other = General locuming, legal, private sector of the NHS, working in state of Jersey

Table 11: Estimated proportion of physiotherapists indicating how strongly they feel that goals set should be function/ performance based. (Q13.2)

Variable	Mean	SD	Skew	Kurt	P
<i>Qualification?</i>					
<i>Diploma</i>	4.64	.50	-.67	-1.84	
<i>BSc</i>	4.57	.94	-2.82	7.89	.318
<i>MSc</i>	4.33	1.06	-2.13	4.67	
<i>Gender?</i>					
<i>Male</i>	4.55	.93	-2.66	7.34	.806
<i>Female</i>	4.54	.92	-2.74	7.87	
<i>Years</i>					
<i>Qualified?</i>					
<i>0-5</i>	4.54	.83	-2.15	4.53	
<i>6-10</i>	4.48	1.24	-2.48	4.88	.327
<i>11-15</i>	4.63	.88	-3.39	13.28	
<i>16-21</i>	4.75	.44	-1.25	-.50	
<i>21+</i>					
<i>Work in NHS?</i>					
<i>Yes</i>	4.49	.95	-2.46	6.16	
<i>No</i>	4.58	.91	-2.95	9.20	.451
<i>Work in Sport?</i>					
<i>Yes</i>	4.45	1.06	-2.40	5.68	
<i>No</i>	4.56	.90	-2.79	8.23	.772
<i>Work in Private Practice?</i>					
<i>Yes</i>	4.61	.79	-2.97	11.24	
<i>No</i>	4.51	.98	-2.57	6.41	.839
<i>Work in Education?</i>					
<i>Yes</i>	4.72	.57	-2.07	3.85	.446
<i>No</i>	4.51	.97	-2.59	6.58	
<i>Work in Private Hospital?</i>					
<i>Yes</i>	4.75	.46	-1.44	.00	.685
<i>No</i>	4.53	.95	-2.62	6.82	
<i>Work in MOD?</i>					
<i>Yes</i>	0	0	0	0	.371 ¹
<i>No</i>	4.54	.93	-2.69	7.31	
<i>Work in Other?</i>					
<i>Yes</i>	4.17	1.60	-2.15	4.64	.716
<i>No</i>	4.56	.88	-2.73	7.90	

Table 12: Estimated proportion of physiotherapists indicating how strongly they feel that goals set should be psychologically focused. (Q13.3)

Variable	Mean	SD	Skew	Kurt	P
<i>Qualification?</i>					
<i>Diploma</i>	4.29	.47	1.07	-1.03	
<i>BSc</i>	3.79	1.15	-1.03	.35	.420
<i>MSc</i>	4.00	.84	-.57	.08	
<i>Gender?</i>					
<i>Male</i>	3.89	1.03	-1.08	.96	.950
<i>Female</i>	3.87	1.08	-1.21	1.08	
<i>Years</i>					
<i>Qualified?</i>					
<i>0-5</i>	3.61	1.16	-.87	.51	
<i>6-10</i>	3.86	.80	-1.11	1.48	
<i>11-15</i>	3.79	1.21	-1.01	.26	.276
<i>16-21</i>	4.00	1.14	-1.58	2.34	
<i>21+</i>	4.20	.89	-1.41	2.12	
<i>Work in NHS?</i>					
<i>Yes</i>	3.68	1.15	-.87	.13	
<i>No</i>	4.04	.94	-1.43	2.37	.064
<i>Work in Sport?</i>					
<i>Yes</i>	3.77	1.07	-1.06	1.00	
<i>No</i>	3.90	1.06	-1.18	1.08	.515
<i>Work in Private Practice?</i>					
<i>Yes</i>	3.92	.75	-.68	.88	.557
<i>No</i>	3.86	1.17	-1.12	.51	
<i>Work in Education?</i>					
<i>Yes</i>	3.89	.83	-1.15	1.74	.728
<i>No</i>	3.88	1.09	-1.14	.85	
<i>Work in Private Hospital?</i>					
<i>Yes</i>	4.25	.89	-.62	-1.48	.314
<i>No</i>	3.85	1.07	-1.15	.93	
<i>Work in MOD?</i>					
<i>Yes</i>	0	0	0	0	.952 ¹
<i>No</i>	3.88	1.06	-1.14	.93	
<i>Work in Other?</i>					
<i>Yes</i>	3.67	1.75	-.92	-1.21	.802
<i>No</i>	3.89	1.02	-1.16	1.16	

Table 13: Estimated proportion of physiotherapists indicating how confident they feel implementing a goal setting programme for patients following ACL surgery (Q14)

Variable	Mean	SD	Skew	Kurt	P
<i>Qualification?</i>					
<i>Diploma</i>	1.36	.63	1.69	2.21	
<i>BSc</i>	1.71	.89	1.10	.33	.372
<i>MSc</i>	1.62	.86	1.39	1.48	
<i>Gender?</i>					
<i>Male</i>	1.57	.75	1.20	.97	.556
<i>Female</i>	1.72	.94	1.24	.21	
<i>Years Qualified?</i>					
<i>0-5</i>	2.26	1.05	.45	-.89	
<i>6-10</i>	1.75	.80	.97	.81	
<i>11-15</i>	1.69	.85	1.04	.37	
<i>16-21</i>	1.25	.53	2.13	4.14	
<i>21+</i>	1.25	.64	2.44	4.77	
<i>Work in NHS?</i>					
<i>Yes</i>	1.65	.90	1.38	1.19	
<i>No</i>	1.66	.84	1.04	.12	.860
<i>Work in Sport?</i>					
<i>Yes</i>	1.68	.89	1.15	.55	
<i>No</i>	1.65	.86	1.23	.70	.867
<i>Work in Private Practice?</i>					
<i>Yes</i>	1.63	.91	1.27	.60	
<i>No</i>	1.66	.85	1.19	.72	.657
<i>Work in Education?</i>					
<i>Yes</i>	2.00	.84	.67	.43	.022
<i>No</i>	1.59	.86	1.35	.96	
<i>Work in Private Hospital?</i>					
<i>Yes</i>	1.38	.74	1.95	3.21	.299
<i>No</i>	1.67	.87	1.17	.55	
<i>Work in MOD?</i>					
<i>Yes</i>	0	0	0	0	.565 ¹
<i>No</i>	1.66	.87	1.19	.57	
<i>Work in Other?</i>					
<i>Yes</i>	1.17	.41	2.45	6.00	.142
<i>No</i>	1.68	.88	1.15	.45	

4.3 Chapter 4 Results

4.3.1 General demographics

Of the 124 physiotherapists that completed the survey, 53 were male and 71 were female. There was no missing data. The qualification obtained to become a chartered physiotherapist ranged from BSc ($n = 89$), MSc ($n = 21$) and Diploma ($n = 14$). The number of years participants had been qualified for ranged from 0-5 years ($n = 24$), 6-10 years ($n = 26$), 11-15 years ($n = 30$), 16-21 years ($n = 24$) and over 21 years ($n = 20$). Places of work demonstrated a range of areas. These were NHS (39.1%), private practice (25.8%), sport (14.6%), education (11.3%), private hospital (4.6%), ministry of defence (0.7%) and other which included locuming, legal and working in Jersey (4%).

4.3.2 Psychological well-being of patients following ACL surgery

Seventy-seven participants reported that addressing the psychological well-being of patients following ACL surgery was very important (62.1%) and 39 felt it was important (31.5%). The extent to which this was influenced by demographic variables (gender, age, highest qualification, years qualified, and sector) was examined through chi-square. However, none of the demographic variables appeared to significantly influence this response (all $p > .05$). Forty participants reported that 25% of patients following ACL surgery have experienced psychological symptoms and 39 participants reported that 50% of their patients had experienced psychological symptoms. Twenty-three participants reported 75% of patients experienced psychological symptoms and 21 reported 100% of their patients had experienced psychological symptoms following ACL surgery. Participants working in the NHS recognise more psychological symptoms than other areas (See Figure 5 Q7). Male participants tended to be more likely (but not significantly

so) to recognise psychological symptoms compared to female participants (See Figure 5 Q7), but female participants recognised more symptoms of anxiety stress ($\chi^2(1) = 5.74, p < .05$) and depression ($\chi^2(1) = 9.50, p < .01$) compared to males. Physiotherapists reported a range of psychological symptoms that patients following ACL surgery tend to present with (See ,Figure 3 Q8). Almost half (48.3%) of participants reported fear of re-injury, 47.6% anxiety, 30.5% depression/ low mood, 16.4% low confidence, 6.4% stress, 5.7% catastrophizing, 5.2% anger and 3.2% reported isolation.

4.3.3 Goal setting

Participants were asked to describe goal setting (See Figure 4, Q10). The most common description which are in order from high to low are SMART goals (43.5%), collaborative goals (29.6%), something a person wishes to achieve (12.7%), functional goals (10.8%) and finally other (2.6%). When comparing participants' demographics, there was a significant effect for highest level of qualification. Specifically, participants are more likely to describe SMART goals if they are less qualified (diploma = 57.1%, BSc = 46.1%, MSc = 19.0%, $\chi^2(2) = 6.41, p < .05$). There was also a significant effect ($\chi^2(4) = 13.13, p < .05$) for years qualified, where participants who qualified 11-15 years were most likely to describe goals as collaborative. Of participants who worked in sport, 40.9% describe goal setting as SMART. Participants who worked in education, 55.6% describe goal setting as SMART.

4.3.4 Type of goal setting practices

Participants were asked to specify the type of goal setting they used for patients following ACL surgery (See **Error! Reference source not found.**, Q11). Over one-third (36%) of participants used SMART goals, 34.6% used functional goals, 32% use patient focussed

goals, 16% set short and long term goals, 10.6% use collaborative goals despite 29.6% of participants previously describing goal setting as collaborative goals. 9.4% stated other, which included goal attainment scaling (GAS) and process, performance and outcome goals. When compared to the participant's demographics, participants who work in sport, 45.5% used functional goals, despite 40.9% of participants working in sport describing goal setting as SMART. Participants who work in the NHS reported to use the highest percentage of SMART goals (49.1%). The number of years qualified presented a statistically significant effect ($p < .01$) where a high percentage of SMART goals used 60% for 0-5 years, but as the years qualified increased, the percentage they would use SMART goals decreased 21 years plus 15% use SMART goals.

4.3.5 Purpose of goal setting

Participants were asked to describe the purpose of goal setting (See Table 4, Q12). The responses which were ranked from the highest percentage to lowest percentage were 88.5% improve patient function, 88.4% improve patient confidence, 86.2% improve patient adherence, 40.2% improve patient attended and finally 35.7% pain reduction. 12.4% of participants reported other. This included return to work, motivate patients and to direct treatment. When compared to the demographic outcomes, 88.4% of participant's state purpose of goal setting was to improve patient confidence, despite previously reporting low confidence only occurs around 6.4% of patients following ACL surgery. **There was a significant effect for patient confidence by qualification ($\chi^2(2) = 8.51, p < .05$), where 100% of diploma-qualified physiotherapists identified this, 91% of those with a BSc, and 71.4% of those with an MSc. 42% of participants who trained at Diploma level reported other purposes, which was significantly ($\chi^2(2) = 12.60, p < .01$) greater than for those with a BSc (9.0%) and MSc (9.5%).** This included motivation, to motivate patients, to direct treatment and to have an end point as other purposes of goal setting. Participants

who trained at BSc level state that goals should be objective based (See Table 10, Q13.1).

Participants who work in the NHS stated (though not a statistically significant effect) that goals should be more psychologically focussed (See Table 12, Q13.3).

4.3.6 Goals that are meaningful to a patient following ACL surgery

Participants were asked to describe how they would know whether goals are meaningful to a patient following ACL surgery (See Table 5, Q14). 36.1% reported goals are set by patients, 34.8% reported goals are jointly set by the patient and physiotherapist, 22.5% report goals are discussed with the patient and only 7.7% report patient feedback to determine whether goals are meaningful to a patient. When compared to the demographic data, participants who work in sport do not use patient feedback when setting goals (0%). Participants who were qualified 0-5 years scored the highest on patient feedback (13%) compared to more experienced physiotherapists.

4.3.7 Issues associated with goal setting

Participants were asked to report any issues that were related to goal setting for patients following ACL surgery (See Table 6, Q14a). The most reported issue was patient setting unrealistic goals (73.2%), despite the fact that 36% of participants use SMART goals. 58.1% reported poor adherence, 54.3% patients were overactive, 45.9% report poor patient motivation, 23.8% reported poor communication and 0.7% reported other. Demographic comparisons highlighted a gender effect for patient motivation ($\chi^2(1) = 5.63$, $p < .05$), where males (56.6%) were more likely to identify this as an issue than females (35.2%). A further gender effect was evident for poor communication ($\chi^2(1) = 4.77$, $p < .05$) in that males (32.1%) also reported this as a more common issue than females (15.5%) did. Participants working in the NHS reported the highest percentage of patients setting unrealistic goals (77.2%) compared to private hospitals who report 37.5% of patients setting unrealistic goals. This was despite participants working in the NHS scored the highest percentages of using SMART goals. Participants working in sport reported

the highest percentage of issues associated with poor adherence (68.2%) and poor patient motivation (59.1%).

4.3.8 Patients who do not achieve goals

Participants were asked what they would do if a patient following ACL surgery does not achieve a goal (See Table 7, Q14b). 34.6% of participants reported they would discuss with a patient, 26.6% reported adjusting the goal, 20.2% reported to set easier goals, 8.9% reported to educate the patient, 6.3% reported to referring the patient and 3.3% reported confronting the patient. When compared to participants demographics, participants who work in the NHS reported the highest percentage when discussing with a patient. **Participants working in private hospital reported the highest percentage for goal adjustment. Participants who qualified with a Diploma reported the highest percentage for confronting the patient ($\chi^2(2) = 6.90, p < .05$).**

Participants were asked to specify the type of training they had undertaken regarding goal setting. 44.2% of participants were trained 'on the job', 33.6% were trained at university level, 33.4% were trained during in-service training, 29.9% received no training, 24.9% were self-taught, 1.4% received training through continued professional development (CPD). From a demographic comparison, participants who qualified at BSc level, 24.7% received no training. Likewise participants who trained at MSc level, 38.1 received no formal training in goal setting. 42% of MSc participants state they were self-taught. Participants who work in sport, 63.6% state they were trained on the job. 50% of participants who qualified at diploma level, 50% received no training.

4.3.9 Confidence in goal setting

Participants were asked how confident they were at goal setting (See Table 13, Q14). 67 stated they were very confident, 36 (n=36) stated they were somewhat confident, 14 (n=14) state they were confident and 6 (n=6) stated they were not confident at goal setting. Older participants generally reported higher levels of confidence ($\chi^2(12) = 23.67, p < .05$). Experience also significantly affected confidence in goal setting ($\chi^2(12) = 29.99, p < .01$). More experienced participants were significantly more likely to report being very confident (85.0%) than other groups.

4.3.10 Future training needs

Participants were asked whether they feel student physiotherapists should receive more training on goal setting (Q14f). 88 participants (n=88) feel that students should receive more training on goal setting, 9 (n=9) stated no and 27 (n=27) were not sure. Participants were asked whether they feel it would be of benefit if chartered physiotherapists received higher CPD training on goal setting strategies (Q14g). 83 (n=83) participants stated yes, 7 participants (n=7) stated no and 34 (n=34) were unsure.

4.4 Discussion

4.4.1 Psychological well-being of patients following ACL surgery

The purpose of this study was to explore physiotherapists' perceptions and understanding of goal setting approaches used for patients who have undergone ACL surgery. Out of the 124 participants who participated in the study, 77 reported that addressing the psychological well-being of a patient following Anterior Cruciate Ligament (ACL) surgery was very important, while 39 felt it was important. Despite this, only a fifth of participants reported that 100% of their patients experienced psychological symptoms. Psychological symptoms are extremely prevalent in patients following ACL surgery (Wierike, Sluis, Akker-Scheek, Elferink-Gemser, & Visscher, 2013). Furthermore there are reported links between psychological distress and physical impairments such as knee laxity in ACL rehabilitation (Brewer et al., 2000); therefore early recognition of psychological symptoms during the ACL rehabilitation process may improve functional outcomes (Wierike et al., 2013). 40 participants reported that a quarter of patients following ACL surgery experienced psychological symptoms and 39 participants reported that half of patients experience psychological symptoms. These exploratory findings indicate that addressing the well-being of a patient following ACL surgery is perceived as being very important, but recognising psychological symptoms appears to be somewhat low. Gordon et al. (1998) investigation into psycho-educational curriculum for sports physiotherapists and other sports related personnel found that 87% of sports physiotherapists felt inadequately trained in recognising the psychological responses and symptoms to injury, in particular ACL injuries. Considering physiotherapists are expected to deal with patients who experience associated emotional disturbances, they are ideally situated to recognise these symptoms early on (McKenna, Delaney, & Phillips, 2002). However, a lack of understanding or training in this area may cause recovery delays or

complicate issues with adherence and compliance to treatment (McKenna et al., 2002). Providing further training at both undergraduate and postgraduate levels on aspects of psychology including early detection of psychological symptoms may minimise emotional distress typically patients may experience following with ACL injuries. In support of this, Sanders et al. (2013) stated that physiotherapists may benefit from further training, with a focus on combining patients beliefs, fears and social context with traditional musculoskeletal physiotherapy.

Participants working in the NHS recognise more psychological symptoms than other areas (Figure 5, Q7) ($p=0.26$). A possible reason for this is that physiotherapists who work in the NHS are likely to work with patient pathways. Patient pathways, also known as integrated care pathways and clinical pathways are structured maps of managed care (Pinder et al., 2005) to ensure that the care patients receive is truly patient centred, taking in to account their physical, social and psychological needs. In the NHS, physiotherapists who treat patients with chronic low back pain commonly use screening tools such as the STarT Back tool (Hill et al., 2011). These tools ensures that patients are screened for any social or psychological distress they may experience (Wagstaff, 2001). However, although some psychological screening tools have been used in ACL, rehabilitation such as psychological readiness to return to sport (Ardern, Taylor, Feller, Whitehead, & Webster, 2013) and a generic patient-based health screening tool (SF-36) (Shapiro, Richmond, Rockett, McGrath, & Donaldson, 1996), these tools are underutilised and to date there is no specific screening tool for patients following ACL surgery. Further investigation into specific psychological screening tools for patients who have undergone ACL surgery may enable physiotherapists to identify and possibly reduce associated fear avoidance or improve self-efficacy.

Male participants tended to recognise psychological symptoms more frequently compared to female participants (Figure 5, Q7). A possible explanation for this is that male physiotherapists are more likely to dominate in professional sports clubs, for example Premier League football clubs, compared to female physiotherapists (Öhman, Stenlund, & Lars, 2001). Over 63% of the surveyed participants working in sport perceive patients to experience psychological distress such as anxiety. This was the highest percentage when compared to other areas such as NHS, private practice etc. In contrast, Mann, Grana, Indelicato, O'Neill, and George (2007) investigated physiotherapists' and sport physicians' understanding of psychological symptoms in the athlete and their ability to refer to a sports psychologist. Findings revealed that almost half of physiotherapists reported to not be aware that their athletes were suffering from psychological distress and around half very rarely referred their athletes to a sports psychologist. Physiotherapists who work closely with athletes and patients should be able to recognise psychological symptoms and refer when appropriate (Arvinen-Barrow et al., 2010b). Future research investigating physiotherapists' psychological referral processes may facilitate a seamless pathway of care.

4.4.2 Psychological symptoms associated with ACL surgery

The survey found that participants reported a range of psychological symptoms that they perceive their patients experience (Figure 3, Q8). The highest percentage was fear of re-injury (48.3%), anxiety (47.6%), depression/low mood (30.5%), low confidence (16.4%), stress (6.4%), catastrophizing (5.7%), anger (5.2%) and finally 3.2% isolation. From a demographic comparison within the survey, participants working in sport reported anxiety to be the most prevalent symptom (63.6%). When compared to previous research by Ardern et al. (2011), fear of re-injury and anxiety were the most common psychological symptoms following ACL reconstruction. In addition, anxiety, pain

response, mood disturbance, depression, and feelings of decreased athletic identity were associated with athletes who had undergone ACL injuries (Christino, Fleming, Machan, & Shalvoy, 2016). From a general population perspective, psychological impairments impacting quality of life (QOL) are common following ACL reconstruction (Filbay, Culvenor, Ackerman, Russell, & Crossley, 2015). Chmielewski et al. (2008) investigated the association of pain and fear of movement/ injury during different time frames of ACL rehabilitation. 97 patients were divided into 3 groups, one within 90 days of ACL, surgery another within 180 days and the third within 372 days. Each group completed a number of outcome measures including the Tampa Scale for Kinesiophobia (TSK), 8-item Short-Form Health Survey (SF-8) and the International Knee Documentation committee (IKDC). The study reported that fear of re-injury reduced during rehabilitation, but significantly increased during the return to sport/ function phase. This would imply that addressing fear of re-injury as part of the rehabilitation process using effective goal setting strategies may optimise return to sport levels. Furthermore, improving the clinicians' understanding of fear of re-injury may enable them to establish whether the fear of re-injury is due to fear of movement during the actual experience of pain or pain related anxiety in the anticipation of pain (Bailey, Carleton, Vlaeyen, & Asmundson, 2010). In contrast, Langford, Webster, and Feller (2009) surveyed confidence in athletes using ACL return to sport scales during ACL rehabilitation. The findings revealed that athletes' perceived self-efficacy scores were very low during the initial phase of rehabilitation, but higher from a return to sport perspective. Moreover, Wierike et al. (2013) demonstrated that individuals who experience fear of injury at any point during the rehabilitation process may have a negative influence on their rehabilitation process. Future research investigating the link between confidence and fear avoidance during ACL rehabilitation may improve physiotherapists' understanding of the psychological challenges that are often associated with patients who undergo ACL surgery.

4.4.3 Understanding of goal setting

Participants were asked to describe what goal setting was (Figure 4, Q10). The most common description was SMART goals (43.5%), followed by collaborative goals (29.6%), something a person wishes to achieve (12.7%), functional goals (10.8%), finally other (2.6%). When comparing the participant's demographics, of the participants who work in education, 55.6% described goal setting as SMART. Surprisingly, 40.9% of participants who work in the sports environment also described goal setting as SMART. Participants who qualified within 0-5 years, 52.2% described goal setting as SMART. Similarly, participants who qualified over 21 years ago, 55% described goal setting as SMART. Given that goal setting has significantly evolved and has been extensively researched over many decades (Locke & Latham, 2013), this would suggest psychology content within physiotherapy training would benefit from being reviewed. In addition the fact that only a low percentage of participants described goal setting using a similar definition as motivational theorists such as Locke and Latham (2006), who defined goal setting as 'something a person wishes to accomplish'. Another description of goal setting is 'the object or the aim of an action' (Locke & Latham, 2013). Describing goal setting as SMART may expose possible gaps in physiotherapists' theoretical understanding of goal setting. The theory that underpins goal setting is incredibly complex and encompasses a number of theoretical models such as Lock and Latham's motivational theory on goal setting (Locke & Latham, 2013), the self-determination theory (Deci & Ryan, 2008), protection motivation theory (Rogers, 1975), Social Cognitive Theory (Bandura, 1989), etc. Providing physiotherapists with further education on these theories would provide them with the essential underpinning knowledge necessary to fully understand the theoretical meaning of goal setting.

Participants who qualified at MSc level predominantly described goals as collaborative goals (33.3). Playford et al. (2000) found that a large proportion of patients perceive and describe goals as something to strive for rather than something to achieve. In addition, the type of words that are associated with the goal setting process is an important consideration. For example patients reported that the word 'goal' suggested they were being set up to fail (Playford et al., 2000). Other words such as problem list and treatment plan were very team/ therapist led and not patient centred (Playford et al., 2000). Using effective communication to describe the goal setting process may be beneficial to optimise patient understanding and engagement during the physiotherapy rehabilitation process.

4.4.4 Types of goal setting practices

Participants were asked to specify the type of goal setting practice they use for patients following ACL surgery (**Error! Reference source not found.**, Q11). 36% of participants used SMART goals. Research has identified a number of different goal setting approaches and theoretical models currently being practiced in health care. The most commonly used was SMART goals (Playford et al., 2000). Research suggests that SMART goals are the main and preferred approach used by allied healthcare professionals (Barnard, Cruice, & Playford, 2010). However SMART goals within healthcare often have a culture of being team/ therapist led (Playford et al., 2009). Goal setting using SMART tends to be practised in healthcare because it has been shown that it saves time, simplifies the formulation of measurable goals and allows a written contract between the patient and the therapist (Bovend'Eerd et al., 2009). However not all goals are attainable, therefore goals which are written in contract form have been found to have a negative effect on patients subjective well-being (Wrosch, Scheier, Miller, Schulz, & Carver, 2003). It was suggested by Wrosch et al. (2003) that, when using SMART goals, the key is to be

adaptable. If a patient does not attain a goal, then disengaging from the goal and re-engaging with a new goal has been shown to reduce possible feelings of “failure” and psychological distress. The findings imply that SMART goals are the most common as they are simple to formulate and an objective outcome can be set, achieved and completed in specified time frame. However, using SMART goals may be appropriate for some patients but not all. In fact, using any goal setting approach is incredibly complex as includes a number of theoretical, biological and behavioural aspects that underpins its effects (Locke & Latham, 2013). Physiotherapists may benefit from further training surrounding the different theoretical models that support different goal setting practices.

From the participants surveyed, 34.6% used functional goals, 32% used patient focussed goals, 16% set short and long term goals, 10.6% use collaborative goals, despite 29.6% of participants’ previously describing goal setting as collaborative goals. Functional and patient related goals appear to have many different meanings. For instance, Fitzgerald (1997) reported that improving quadriceps femoris muscle strength is seen as an essential functional goal for patients who have undergone ACL surgery. Improving scores on functional related screening tools is another approach, that could be used when setting goals to improve function (Seto, Orofino, Morrissey, Medeiros, & Mason, 1988). Shelbourne and Klotz (2006) investigated rehabilitation approaches to achieve total knee symmetry following ACL surgery. The study showed by setting goals, which were worded as ‘reducing swelling’, ‘improving range of motion’ and ‘muscle strength’ included the non-surgical side would enable patients to achieve optimum results. Considering the stated goals were accepted definitions of physical function, they are not functions that are necessary meaningful to patients. Correspondingly, Mancuso et al. (2001) investigated patients expectations and perceptions of rehabilitation in which 377 patients who underwent knee surgery were surveyed. Seventy five patients from the

sample underwent ACL reconstructions. The functional goals that were set by the patients included reduction of knee symptoms e.g. pain, improvement in walking, running etc. and improvement in their psychological well-being. Although it is important that objective measures such as strength and range of motion are used to determine the effectiveness of physiotherapy interventions (Myer et al., 2006), goals which are specific and meaningful to the patient must be at the forefront of rehabilitation. Goal set to improve patients' function might be set by the patient, but are often physiotherapy focused such as muscle power, joint stability and muscle endurance (Mittrach et al., 2008). This was supported by Kocher et al. (2002) who surveyed the level of patient satisfaction and compared it with functional outcomes after reconstruction of the ACL. The survey revealed that patients were less satisfied if their knee had a loss of objective parameters such as strength, laxity and range of movement, but they were significantly less satisfied if they were unable to return to an appropriate level of patient specific functions, which were walking, running and ascending/ descending stairs. It is imperative that both the patient and physiotherapist understand what is meant by functional related goals through communication so that appropriate goals are mutually agreed early on in the rehabilitation process. Randall and McEwen (2000) described functional goals as 'the individually meaningful activities that a person cannot perform as a result of injury, illness, or acquired condition, but wants to be able to accomplish as a result of physical therapy'. Investigating the way the patient is involved during the goal setting process may highlight future training needs to ensure that goal setting and hence clinical outcomes are achieved using a patient centred approach.

Sixteen percent of participants set short and long term goals, also known as proximal (short term) and distal (long term) goals (Manderlink & Harackiewicz, 1984). Setting proximal goals has been shown to increase intrinsic motivation compared to setting no goals at all (Manderlink & Harackiewicz, 1984). Latham and Seijts (1999) reported that when proximal and distal goals are set as opposed to 'do your best', perceived levels of self-efficacy significantly increased, proposing that combining proximal and distal goals may optimise patients' confidence. Setting short and long term goals in an outpatient setting can be very time consuming and therefore this approach is not always used by physiotherapists (Jessep, Walsh, Ratcliffe, & Hurley, 2009). An audit of physiotherapy clinical notes of patients who had undergone ACL reconstruction or total knee replacement revealed, that out of 1254 sets of physiotherapy notes apart from the initial assessment, 86% of clinical notes lacked detail and clarity regarding the range of parameters used to monitor patient outcomes and objectivity of treatments, and no functional assessments were regularly recorded (P. A. Turner et al., 1999). This may infer that professional standards of clinical note writing are not being met. Further investigation regarding the clinical recording of goal setting interventions in ACL rehabilitation would help identify whether this was adequately being performed.

Only 10.6% of participants used collaborative goal setting despite 29.6% of participants' previously describing goal setting as collaborative goals. Goal setting should be patient centred, but the process of setting goals is often collaborative (McClain, 2005). According to a study performed by Bassett and Petrie (1999) collaborative goal setting appears to be more effective than physiotherapy mandated goal setting. Three groups were assigned where one group had no goal setting input, one group was collaborative and the other group was physiotherapy mandated. The collaborative group demonstrated more improvement in terms of functional outcomes, muscle power and performance. However

the group that had no goal setting interventions performed better than the physiotherapy mandated, group. Considering the group which received no goal setting also improved would imply that goal setting may not be appropriate for all patients, but collaborative goal setting appears to be the most effective. Research has identified ethical concerns if the goals are not patient focussed and this is deemed as paternalistic, (McClain, 2005). A study by Heijne et al. (2008), who conducted semi-structured interviews on 10 patients who had undergone ACL surgery, found that patients felt they were given no choices regarding their treatment options and that goals did not match patients' expectations. In addition Parry (2004) investigated patients' and physiotherapists' communication practices during the goal setting process and found that. Although it was classed as collaborative goal setting, physiotherapists tended to highlight physical objectives e.g. range of movement, strength and subsequently set them as goals. This would imply that possible goal setting processes may not be carried out such as gaining patient feedback, goal commitment and goal planning. As suggested by Scobbie et al. (2013) would be to use a goal setting framework so that important processes are not missed. For example, Scobbie et al. (2013) would look at developing the goal intention through discussion, then the patient would self-set the goals, followed by measuring self-efficacy of self-set plans. Investigating the implementation of a framework that is specific ACL rehabilitation may minimise issues regarding adherence, self- efficacy and goal attainment.

Regarding goal setting approaches not mentioned above, 9.4% of participants used goal attainment scaling (GAS) and process, performance and outcome goals. It may appear surprising over 32% of participants report that they use patient focussed goals, less than 9% of participants use GAS. GAS is a patient specific instrument that encourages patients to form their own goals (Anita Stevens, Beurskens, Köke, & van der Weijden, 2013). There is a paucity of research to support GAS as a clinical tool in conjunction with goal

setting (Wade, 2009). GAS is one approach that overcomes the ‘one size fits all’ limitation of fixed-item practices such as SMART by using a method to set goals and measuring programme success using individualized patient goals (Mannion, Caporaso, Pulkovski, & Sprott, 2010). In addition, using GAS with patients is particularly responsiveness to change and sensitive to patients goals (Malec, 1999).

Demographically, of the participants who work in sport, 45.5% use functional goals, despite 40.9% of participants working in sport describing goal setting as SMART. A substantial body of research into goal setting in sport has identified three goal setting processes. These are outcome, process and performance goals and have previously been discussed in chapter three (Taylor & Wilson, 2005). The fact that physiotherapists working in sport describe goals as being SMART, but use functional related goals may indicate a training need. Using process, performance and outcome goals in sport have been empirically proven to improve athletic performance compared to a ‘do your best’ approach (Kyllo & Landers, 1994). Therefore it is reasonable to suggest that physiotherapists working closely with athletes and other members of the sports teams should consider using more relevant goal setting practices such as process, outcome and performance goals.

4.4.5 Purpose of goal setting

Participants were asked to describe the purpose of goal setting (Table 4, Q12). 88.5% of participants reported the purpose was to improve patient function, 88.4% to improve patient confidence, 86.2% to improve patient adherence, 40.2 to improve patient attendance and 35.7% for pain reduction. 12.4% of participants reported other. This included return to work, motivate patients and to direct treatment. Goal setting is a motivational tool and encompasses a number of domains such as self-efficacy, self-regulation, performance/ function and goal commitment/ adherence (Locke & Latham, 2013). These domains are incredibly complex in the way they interrelate to one another. For example improving self-efficacy has been shown to increase goal commitment, and performance enhancement is influenced by perceived self-efficacy (how confident a person is at achieving the task) (Locke & Latham, 2013). Other purposes of goal setting are thought to be empowering the patient so that a stronger task orientation can occur (Gilbourne & Taylor, 1998).

The demographics that were surveyed reported that, 88.4% of participants' stated the purpose of goal setting was to improve patient confidence, despite previously reporting that only 6.4% of their patients experience confidence issues. Research suggests that confidence is a vital component for a patient to return to sport or activity following ACL surgery (Kate E. Webster et al., 2008). However very few confidence/ self-efficacy screening tools exist in ACL rehabilitation. Using an appropriate screening tool to establish not only confidence/ self-efficacy concerns, but also the degree of concern would enable appropriate support strategies to be incorporated within rehabilitation. Addressing patients confidence may also have a beneficial effect on patients compliance and adherence to treatment according to Brewer et al. (2000). There are other factors than can influence a patient's level of adherence and compliance to physiotherapy treatment.

Other examples include depression, anxiety and pain levels during exercise (Jack et al., 2010). This galvanises the importance of implementing a psychological screening tool as part of an ACL rehabilitation plan to help address/ identify any potential psychological barriers that could hinder success. There may be a training need amongst physiotherapists to develop the understanding and knowledge to effectively identify patients who present with psychological symptoms. A study by Gordon et al. (1998) surveyed a range of sports injury related personnel reported 84% of physiotherapists felt training in psychological aspects of injury and rehabilitation was inadequate and 87% would have welcomed much more training on this topic. Understanding the psychological effects of injury and rehabilitation in order to incorporate appropriate interventions (working within the scope of practice of a physiotherapist) appear to be an essential component for patients who have undergone ACL surgery, but yet this is not demonstrated in the literature. In addition, the purposes of goal setting may not be fully understood by therapists. For example, Baker, Marshak, Rice, and Zimmerman (2001) describes the purpose of goal setting as ‘The Guide to Physical Therapist Practice recommends that therapists should identify patients’ goals and objectives during the initial examination in order to maximize outcomes’. This statement implies that it is the therapists’ role to identify goals, whereas this should be jointly identified with the patient to allow the physiotherapist to use a more patient centred approach.

42% of participants who trained at Diploma level reported one of the purposes of goal setting was other. This included general motivation, to motivate patients, to direct treatment and to have an end point. This may suggest a lack of understanding as goal setting is used as a motivational tool, but its purpose and effects are more complex. For instance, there are reported autoimmune associations with goal setting, in particular goal difficulty where heart rate change was positively related to the cognitive and behavioural

symptoms (Hendrix, Ovalle, & Troxler, 1985). Participants who trained at BSc level stated that goals should be objective based (Table 10, Q13.1). Participants who work in the NHS stated that goals should be more psychologically focussed (Table 12, Q13.3). As stated previously, working within the NHS uses involves using patient or clinical pathways in which goal setting ensures the psychological needs of the patient are also being met.

4.4.6 Goals that are meaningful to a patient following ACL surgery

Participants were asked to describe how they would know whether goals are meaningful to a patient following ACL surgery (Table 5, Q14). 36.1% reported goals are set by patients, 34.8% reported goals are jointly set by the patient and physiotherapist, 22.5% reported goals are discussed with the patient and only 7.7% reported patient feedback was to determine whether goals are meaningful to a patient. There is a concern that only a small percentage of participants use feedback as, according to Locke and Latham (2006), feedback is one of the key moderators in goal setting. Feedback is essential to track patients' progress, commitment to the goal, task complexity and to assess the importance of the goal (Locke & Latham, 2006). This was corroborated by C Cott and Finch (1990) who reported feedback to be an essential component as and feedback which is lacking detail could limit goal achievement. Other aspects of feedback during the goal setting process caused patients to self-monitor their progress more, which subsequently led to a positive increase in mood state and behaviour change (Ivancevich & McMahon, 1982). In addition, Schunk (1990) conducted a study with students who were assigned to self-set their own goals and regular feedback regarding progress was given allowing them to observe, reflect and discuss their performance. As a result of regular feedback, students felt more capable in improving their own skills goal attainment and self-efficacy. Providing patients who have undergone ACL surgery with regular feedback may

minimise potential issues with attendance, goal achievement and compliance to treatment. Participants who work in sport do not use patient feedback when setting goals (0%). Participants who were qualified 0-5 years scored the higher on patient feedback (13%) compared to more experienced physiotherapists. For goals to be effective, active participation from the patient is necessary to ensure goals agreed are meaningful to the patient (Baker et al., 2001). Furthermore, Baker et al. (2001), which investigated patient participation approaches in the goal setting process, showed that patients largely perceived their role to be a passive one. This could imply possible communication deficits whereby definitions, understanding and perceptions regarding goal setting may not be discussed and mutually agreed; therefore causing possible difficulties from a patient engagement perspective. These findings highlight that feedback during the goal setting process is one of many facets required to maximise goal attainment. Future research exploring the patients' expectations from a feedback perspective e.g. verbal, observation, self-reflection etc. may direct future goal setting practices in ACL rehabilitation.

4.4.7 Issues associated with goal setting

Participants were asked to report any issues that were related to goal setting for patients following ACL surgery (Table 6, Q14b). The most reported issue was patients' setting unrealistic goals (73.2%), despite the fact that 36% of participants reported using SMART goals. 58.1% reported poor adherence, 54.3% reported patients were overactive, 45.9% reported poor patient motivation, 23.8% reported poor communication and 0.7% reported other. Demographic comparisons showed that participants working in the NHS reported the highest percentage of patients setting unrealistic goals (77.2%) compared to private hospitals who report 37.5% of patients setting unrealistic goals. This was despite participants working in the NHS scoring the higher percentage for using SMART goals. Playford et al. (2009), found that patients may use their own strategies if they do not

achieve goals. A possible explanation as to why patients may set unrealistic goals is that they may attempt to resist goals if they perceive to that they lack the ability (self-efficacy) to pursue them, moderating requests for ambitious goals if set by the therapist (Playford et al., 2009). From an exploratory perspective, it may be implied that there may be possible issues with communication if a reduction in self-efficacy is not detected by the physiotherapist to then appropriately intervene. In addition, communication between the patient and physiotherapist may also be a key factor regarding unrealistic goals. Goal setting requires effective communication between the patient and therapist to ensure that both parties are in agreement with the set goals and the treatment plan (Barr & Threlkeld, 2000). Establishing a patient/ practitioner relationship enables communication strategies to be employed, therefore any barriers or problems e.g. patient setting unrealistic goals can be overcome through discussion and realistic goals can be set through mutual agreement (Barr & Threlkeld, 2000). Jensen and Lorish (1994) used a model to minimise any unrealistic goals being set. The four stages in their model are; establishing the therapeutic relationship, diagnosing through mutual enquiry, finding common ground through negotiation, intervening and following up. These four stages allows the patient's beliefs, desires and needs to be explored through discussion and feedback. The large percentage of participants perceived that patients are setting unrealistic goals may highlight a need to improve communication strategies used by physiotherapists. Using a model similar to Jensen and Lorish (1994) may enable physiotherapists to implement goal setting more effectively, therefore reducing the number of unrealistic goals being set. A study by Hemmings and Povey (2002) which surveyed 179 UK chartered physiotherapists regarding the psychological content of their practice and the key psychological skill they reported to personally lack was their ability to 'set realistic goals'. This might infer that, although the results from the survey showed that patients setting unrealistic goals was the most commonly reported issue in the goal setting process,

exploring how the goal setting process between the physiotherapist and patient are implemented may provide some valuable solutions.

Physiotherapist working in sport reported that 68.2% of goal setting issues are related to poor adherence and 59.1% was related to poor motivation. These findings may suggest that the way goals are being implemented and followed up could be improved. These findings are similar when compared to previously published studies like Hemmings and Povey (2002), who stated that 49% of physiotherapists experience compliance/ adherence issues when working with athletes. In addition physiotherapists who work in sport have been known to have a stigma associated with having to consult a sports psychologist (Caroline Heaney, 2006). Studies that have explored physiotherapists' perceptions and opinions regarding the psychology content of their practice all suggest that prior formal training in psychology is lacking (Arvinen-Barrow et al., 2008; Caroline Heaney, 2006; Hemmings & Povey, 2002). As well as further training in the field of psychology, more education about the role of the sports psychologist and the benefits of early referral may minimise future barriers within rehabilitation.

4.4.8 Patients who do not achieve goals

Participants were asked what they would do if a patient following ACL surgery does not achieve a goal (Table 7, Q14b). 34.6% of participants reported they would discuss it with the patient, 26.6% reported adjusting the goal, 20.2% reported to setting easier goals, 8.9% reported educating the patient, 6.3% reported referring the patient back to their GP and 3.3% reported confronting the patient. There are a number of reasons as to why patients may not achieve goals, for example, a goal may be unrealistic (winning an Olympic medal), accident, illness, unemployment, change in family circumstances etc. (Wrosch, Miller, Scheier, & De Pontet, 2007). Other reported factors relate to the self-regulation

theory, in that patients who are generally optimistic believe that they will attain all higher level goals and are relatively positive compared to patients who are pessimistic and often experience more negative feelings (Rasmussen, Wrosch, Scheier, & Carver, 2006). There is a growing body of research to support the approach of goal adjustment (Rasmussen et al., 2006; Wrosch et al., 2007; Wrosch et al., 2003). When a goal is no longer attainable, being flexible by adjusting the goal has been found to reduce the negative impact on the patients' experience, reduce psychological distress such as depression and improve subjective optimism (Schmitz, Saile, & Nilges, 1996). The purpose of goal adjustment through disengagement and reengagement is to enable the patient to quit trying to attain something that is unattainable to prevent repeated failure and subsequent increase in negative mood (Wrosch et al., 2007). Reengaging a goal by newly selecting an alternative goal helps promote the patients' sense of identity and enhances the patient's subjective well-being, which may increase his/her motivation to achieve the goal (Wrosch et al., 2003). In contrast, Wrosch et al. (2003), states that patients may have no alternative goals that they deem meaningful to attain. This could exacerbate feelings of failure and possibly induce stress if an alternative goal was not selected. It is clear from the literature that an understanding regarding key psychological theories such as the self-regulatory processes, which are directly involved with the disengagement and reengagement of goals, would allow physiotherapists to underpin their goal setting practices with appropriate theoretical knowledge.

There is a paucity of physiotherapists that would refer on to a psychologist according to S. Jevon and L. Johnston (2003), who explored physiotherapists' views and perceptions regarding the psychological aspect of physiotherapy practice stated that under 10% of physiotherapists had access to a British Sport and Exercise Sport Psychologist and only a small percentage ever referred patients to a psychologist. Recognising when to refer

patients on to a psychologist is an important skill and could reduce future complications, for example return to sport anxiety or fear avoidance issues.

4.4.9 Training and confidence to use goal setting

Participants were asked how confident they were at goal setting (Table 13, Q14). 67 participants stated they were very confident, 36 participants stated they were somewhat confident and 14 participants stated confident. Surprisingly participants who were least experienced (0-5, 6-11 years) appeared to be significantly more confident at goal setting compared to more experienced participants ($p=0.00$). Correspondingly, the level and type of training did not match the high levels of confidence. A high percentage of participants (29.9%) reported to have received no training and 24.9% of participants were self-taught. The fact that goal setting has been widely researched and evolved over many decades (Locke & Latham, 2013), it is a concern that a high percentage of physiotherapists from this study have had no formal training. These findings congruent previous research which suggests there are significant gaps in psychology training within physiotherapy programmes (Alexanders et al., 2015; Arvinen-Barrow et al., 2008; S. Jevon & L. Johnston, 2003). A survey investigating psychology teaching within British physiotherapy curricula was conducted by Baddeley and Bithell (1989) and found that psychology was not being taught in training. The majority of students agreed that psychology it had a level of importance, students stated that ‘they were not psychologists’ (Baddeley & Bithell, 1989). A more recent study by C Heaney, Alison, et al. (2012) conducted a mixed methods study of 17 United Kingdom universities and demonstrated that although some psychology training is included in physiotherapy programmes, significant disparities exist in the extent of training provided and how it is delivered. Considering there are over 20 years between the aforementioned studies, it would appear

that there are still ongoing issues regarding inadequate psychology training within physiotherapy curricula.

44.2% of participants were trained 'on the job', 33.6% were trained at university level, 33.4% were trained during in-service training, 1.4% received training through continued professional development (CPD). There appears a lack of consistency between physiotherapists who were previously provided with formal psychological training and physiotherapists who have developed an understanding through experiential learning (Cupal & Brewer, 2001). A lack of consistency across the undergraduate curriculum, coupled with student and new graduate perceptions of psychology, would indicate further research is needed aiming to demonstrate the importance of standardising the psychology content of UK physiotherapy degree programmes.

4.5 Conclusion

In summary, physiotherapists' goal setting approaches appear to be limited to SMART and collaborative goal setting, understanding other goal setting approaches would enable physiotherapists to use the most appropriate approach for their patients. Feedback appeared to be underutilized as part of the goal setting process. Using regular feedback is a key moderator in the goal setting process and will aid in goal attainment.

4.4.10 Limitations and future directions

This exploratory study has several strengths, including the breadth of settings from which physiotherapists were recruited and the variation in stage of career in the sample. There are however limitations that should be acknowledged. Firstly, the sample is drawn from just one nation and therefore, the practice and training may not be inferable to other nations. Secondly, the nature of the survey was designed to be exploratory and allow

open-ended answers. While this provides a more ecologically valid response, it also creates an extra stage in analysis, whereby the research team must identify common themes, which naturally reduces the original content from the participants. Future research exploring physiotherapists' theoretical understanding of goal setting and their approaches when applying goals with patients may highlight specific important training needs to improve the effectiveness of goal setting.

Chapter 5

**Physiotherapists' understanding,
training and experiences of goal setting
practices used in ACL rehabilitation**

Chapter 5 - Physiotherapists' understanding, training and experiences of goal setting practices used in ACL rehabilitation

5.0 Introduction

5.0.1 Patient management

Effectively managing the patient using a patient-centred care has been reported to improve a number of patient outcomes, including increased patient adherence (Bassett, 2003), improved patient satisfaction (Pelzang, 2010) and improved patient well-being (Nelson, Helfrich, Sun, & et al., 2014). Therefore it is important that whenever physiotherapists are managing patients through the goal setting process, a patient-centred approach is used (Anon, 2005). This section explores some of the wider context of setting goals including the importance of managing the patient effectively and whether physiotherapists understanding and training is sufficient in these associated areas.

It is a professional expectation of the National Health Service (NHS) policy that all care should be patient centred (Anon, 2005). Although patient centred care has been around for many decades, it appears to have no set definition (Kitson, Marshall, Bassett, & Zeitz, 2013). Stewart (2001), conducted a systematic review investigating whether there was a global definition of patient-centred care. The results reported that there a number of definitions exist, therefore the study concluded patient-centred care could be defined as ‘taking in to account the patient’s desire for information and sharing decision making and responding appropriately’ (Stewart, 2001). The study also included investigating patients’ perceptions surrounding patient centeredness and reported patients’ definitions to be ‘seeking an integrated understanding of the patients’ world-that is, their whole person, emotional needs and life issues’. This would suggest a possible disparity between patient’s perceptions being more psychosocial focused compared to the clinician’s

perceptions being more clinical orientated. Furthermore, understanding the patients' social and emotional needs by establishing a therapeutic rapport may facilitate patient centeredness. In view of this, Beach and Inui (2006) suggests that patient centeredness is more effective when a therapeutic relationship has been built early on between the patient and clinician. Furthermore, building a therapeutic relationship is said to provide a foundation for many positive outcomes, for example greater patient satisfaction and increased patient engagement (Beach & Inui, 2006). In addition, the manner in which the dialogue is conducted may empower the patient to have valuable input based around their beliefs and perceptions, therefore facilitating a more patient-centred approach (Mead & Bower, 2000). This would imply that effective communication from the outset of patients care appears essential in facilitating a therapeutic relationship and promoting patient centeredness.

Managing patient expectations plays an important role in optimising a patient centred approach (Barron et al., 2007), but what constitutes 'managing expectations' varies within the literature. M. Potter, Gordon, and Hamer (2003b), conducted a focus group based study investigating both the patients' and physiotherapists' perceptions of patient expectations in private practice. The results revealed that physiotherapists' expectations of patients were being punctual, gaining respect and trust, whilst conversely, patients' expectations were more physical related, including symptomatic relief and a 'hands on treatment' approach. This study did not provide any detail as to whether any of the patients interviewed in the study had received any physiotherapy in the past. Determining whether patients have had any previous physiotherapy experience is quite an important consideration according to Hills and Kitchen (2007), who reported that patient who had no previous physiotherapy experience often base their expectations on the basic roles of a physiotherapist such as restoration of function and improving pain. This suggests that

there needs to be a balance between addressing patients' expectations without encouraging unhelpful behaviours, for example addressing the patients pain, could inadvertently increase pain behaviours according to Klaber Moffett and Richardson (1997). This may emphasise the importance of effective communication between physiotherapists and patients in enabling a balanced patient centred approach to always be at the centre of patient care.

Another important consideration when managing patients' expectations, in particular with patients who undergo ACL surgery, is ensuring expectations are realistic in relation to the surgery (Minzlaff et al., 2017). For example a routine ACL procedure compared to an ACL repair with meniscal repair. Minzlaff et al. (2017), conducted a mixed method study involving sixty patients aimed at monitoring health related and return to work outcomes following ACL surgery. The patients completed a physical related questionnaire and a general life satisfaction questionnaire, which were completed at 3, 6, 12 and 24 months post ACL surgery. The results revealed that the general life satisfaction scores were considerably impaired during the early post-operative phases (6-12 months), but gradually improved over the two year period, suggesting that physiotherapists need to be aware of the psychosocial implications of undergoing ACL rehabilitation and how best to optimise patient well-being during that process. In addition, Heijne et al. (2008) conducted a semi-structured interview study exploring patients' personal experiences during ACL rehabilitation. The themes that emerged from the study indicated that patients required more explanation regarding the outcomes following ACL surgery and that their expectations did not match the typical progressions that occur during the rehabilitation. In addition, the patients that were sampled in the study felt they could have been coached more effectively by the physiotherapists during their rehabilitation. This would imply that the communication between the physiotherapists and patients could have been more

effective and the patients' understanding, views and perceptions of ACL rehabilitation may have not have fully explored by the physiotherapists.

From a patient's perspective, there is a substantial amount of qualitative studies exploring patients perceptions and experiences following ACL surgery. DiSanti et al. (2018) explored high school athlete perceptions of ACL rehabilitation and return to sport barriers. A number of main themes emerged including associating sport based exercises with ACL injury, uncertainty regarding a full recovery and psychosocial support during rehabilitation. In support of this Scott, Perry, and Sole (2018) conducted a semi-structured interview design involving 9 participants and explored their experiences following ACL rehabilitation. The results revealed that patients felt that their 'rehabilitation journey' was somewhat disruptive due to factors including psychosocial support strategies provided by the clinician, loss of identity and a lack of focus on their 'life at present' appeared to influence their experiences positively and negatively. To further signify the importance of considering the patients perspectives, Heijne et al. (2008), although ten years previous to the other two studies, explored patient's perspectives up to one year post ACL surgery. The results identified a number of patient frustrations surrounding lack of choice in relation to surgery versus conservative management, expectations not being met and more guidance and coaching through the goal setting process. It can be drawn from these studies both ten years ago and at present that being supported from a psychosocial appears to have equal importance as the physical related outcomes according to the patient's perspective. Due to the weighting of studies focussing on the patients views, experience versus the literature surrounding physiotherapist understanding and experience of setting goals within ACL rehabilitation, the main focus of this thesis is to provide further insight of how issues surrounding the therapists approach to ACL surgery will undoubtedly benefit these reported patient concerns.

5.0.2 Knowledge of goal setting

As discussed in a previous chapter, there are common approaches to setting goals. The most commonly used in healthcare is SMART goals and the most common methods in which goals are implemented are patient led, physiotherapist mandated and collaborative goal setting (Peng et al., 2014). As previously mentioned, involving the patient during at the beginning of their initial physiotherapy consultation facilitates patient centeredness, therefore using a collaborative approach when setting goals optimises patient engagement. Bassett and Petrie (1999) investigated the effectiveness of goal setting. Participants were randomly allocated to one of three groups: a collaborative goals group, a physiotherapist-mandated goals group or a group involving no formal goal setting. All groups were given an identical home exercise routine. The results showed that the group which had no formally set goals performed better than physiotherapy mandated goals. However, the collaborative based goal group appeared to demonstrate the most improvements regarding strength and range of movement. It is noted that this study only used clinical/treatment goals therefore it may have enabled the participants which had no formal goals set to set their own. Furthermore this may have given patients more ownership and control over their situation, subsequently increasing their adherence to complete the exercise routine. In favour of this, setting goals which are of personal importance to the patient is a key moderator to goal success (Locke et al., 1988). In addition, setting goals which have been primarily driven by the patient may increase patient engagement, which enables the patient to be more central to their care.

5.0.3 Training

Effective communication skills are of paramount importance during the goal setting process (Locke & Latham 1984), and are a professional requirement set by the CSP (CSP, 2013). From a goal setting stand point, communication skills are of paramount importance so that patients' views are elicited and incorporated fully during the goal setting process (Parry, 2004). However, Parry (2004) conducted a conversation analysis of physiotherapists incorporating goal setting strategies with patients. The study reported that the physiotherapists set goals which were a direct result of their assessment findings. It can be drawn from this study that although the patients should have a degree of ownership of their goals, there was a lack of patient involvement during the goal setting process, which meant that the goals set were not patient-centred. Brewer (1998) who conducted a survey of psychological interventions used by physiotherapists regarding benefits and issues. One of the main issues physiotherapists reported in this study was patients setting unrealistic goals. Therefore goal setting requires an effective dialogue between the physiotherapist and patient so that goals are meaningful to the patient, but are equally appropriate for the purpose of rehabilitation (Locke & Latham, 2013). If the aforementioned was consistently implemented, then frequent reports of patients setting unrealistic goals may greatly be minimised.

Communication is a broad topic which has numerous strands for example team communication, interpersonal communication and communicating with patients (Schoeb, Staffoni, & Keel, 2015). In addition, there is clear empirical evidence to show a link between effective communication and patient satisfaction, improved patient adherence and reduction in symptoms (Schoeb et al., 2015). Schoeb, Staffoni, Parry, and Pilnick (2014), conducted a conversation analysis exploring thirty seven physiotherapists

implementing goal setting with patients in a musculoskeletal outpatient setting. The results revealed that the physiotherapists often assumed the patient had sufficient understanding in physiotherapy related goals and the patient's proposed goals indicated a lack of understanding of the rehabilitation process. This suggests that inadequate communication appeared to be a fundamental issue between the physiotherapist and patient. In addition, the patient/ practitioner relationship may also have been an area to consider as a potential issue. Therefore, effective communication is an extremely complicated skill that requires a considerable amount of underpinning psychological based theory, thus it is not just about being approachable, nice and a good listener (Kurtz, Silverman, & Draper, 2016). From a student physiotherapist perspective, it would be reasonable to assume that communication skills should be an integral part of a student physiotherapist's training. However, this is not reflected in the current physiotherapy curriculum according to Parry and Brown (2009), who conducted a survey investigating teaching and learning strategies on communication skills in physiotherapy. The survey targeted UK training and university based institutions. The results firstly identified gaps in some physiotherapy programmes regarding relevant theories associated with effective communication. Secondly, the results reported the most common method used to assess the students' understanding in communication skills was a written assignment (Parry & Brown, 2009). This suggests more realistic method of assessment of assessment which mimic clinical practice may be needed. It would appear that effective communication skills are an essential part of setting goals and the potential patient benefits that are linked with this are clearly outlined in the literature. However, despite this, the training in communication skills for physiotherapy students appears to be given little consideration.

It is clear that effective communication skills and establishing a therapeutic rapport are essential components for goals to be effective. Ensuring that the patient is at the forefront

of care has a number of potential benefits including improved patient satisfaction and increased patient adherence (Schoeb et al., 2014), which are all contributing factors to goal attainment. The central aim of this study was to explore physiotherapists' experiences of using goal setting strategies for patients who have undergone ACL surgery. It is hoped that this study provides great insight into the challenges and complexities involved in setting goals. In addition, any key aspects that are highlighted that show that physiotherapists require further training in goal setting will be contextualised in to a potential goal setting model in the final chapter of this thesis.

5.1 Method

Prior to the commencement of the interviews, the study received full ethical approval from the University of Hull Ethics Committee on the 12th of December 2016 (see Appendix D).

5.1.1 Design

The aim of the study was to explore physiotherapists understanding and experiences of goal setting with patients who have undergone ACL surgery. Purposeful sampling was used to allow a selection of data-rich cases (Yazan, 2015). Data was collected by using semi-structured interviews and analysed using thematic analysis. An inductive approach was adopted as it offers an accessible and theoretically-flexible approach to analysing qualitative data (Braun & Clarke, 2006a). A total of twenty four participants were included in the study. This consisted of eight NHS physiotherapists, eight professional sport physiotherapists and eight university lecturing physiotherapists. Having eight participants for each discipline of physiotherapy is supported by the work of Francis et al. (2010) who indicated that saturation is likely to be achieved between eight and ten interviews. Interviews ranged from thirty to fifty minutes in duration.

5.1.2 Participants

Purposeful sampling was employed using a number of search strategies. Participants from chapter 4 were given the opportunity to provide relevant contact details in view of partaking in future research. Therefore the initial search strategy targeted the participants from the previous study. The second search strategy consisted of networking at CSP training days, conferences and contacting potential participants via email. The third

strategy involved contacting programme leads from higher education institutions, physiotherapy managers from both the sporting environment (EIS, Sport England, FA and RFU) and NHS environment inviting physiotherapists who have an interest and relevant experiencing working within ACL rehabilitation. These search strategies resulted in thirty UK Chartered physiotherapists, currently practicing in the United Kingdom, as potentially appropriate candidates to be approached. Participants were eligible if they were HCPC registered, a UK practicing physiotherapist, a CSP member and had worked within ACL rehabilitation. Six participants did not respond following a reminder invitation email leaving a total of twenty four participants. The participants consisted of thirteen males and eleven females. Eight participants worked predominantly in the National Health Service (NHS), eight participants worked in a professional sporting environment and a further eight worked in higher education as academic staff. All participants reported having experience of treating patients who had undergone ACL surgery. Table 14 shows characteristics of the participants included in the study:

Table 14 Characteristics of Physiotherapists

ID	Gender	Main Qualification	Additional Qualification	Years Qualified	Employment
P1	Female	BSc	MSc Physiotherapy	24	Mental Health
P2	Female	BSc	No	7	Private Hospital
P3	Female	BSc	MSc MSK Physiotherapy	12	NHS MSK
P4	Male	BSc	No	0	Academy Football
P5	Male	BSc	No	0	Youth Athletes
P6	Male	BSc	No	1	Semi-Pro Football
P7	Female	BSc	MSc MSK Physiotherapy	23	Academic
P8	Female	BSc	No	1	Men's Elite Rugby
P9	Female	BSc	No	6	Elite Rugby
P10	Male	BSc	BSc Sport Science	10	Pro Rugby
P11	Female	MSc Pre-Reg	PhD Physiotherapy	4	Researcher
P12	Male	MSc Pre-Reg	PhD Student	0	Academic
P13	Female	BSc	MSc Physiotherapy	6	Multi-Sports
P14	Female	BSc	No	8	NHS MSK
P15	Male	BSc	No	12	NHS MSK
P16	Male	BSc	BSc Sport Rehabilitation	12	Multi-Sport
P17	Female	BSc	MSc Physiotherapy	20	Academic
P18	Male	MSc Pre-Reg	MSc MSK Physiotherapy	15	Academic
P19	Female	BSc	MSc MSK Physiotherapy	5	NHS MSK
P20	Male	BSc	No	7	NHS MSK
P21	Male	BSc	No	15	NHS MSK
P22	Male	BSc	No	2	NHS MSK
P23	Male	BSc	PhD Physiotherapy	15	Academic
P24	Male	BSc	MSc Sport & Exercise	19	Academic

5.1.2 Procedure

The interview was initially piloted to one randomly selected participant to allow any rephrasing and/or minor changes to be made to the interview schedule. A letter of invitation included information about the research and the informed consent process (See Appendix D). All invitations were electronically distributed via email to physiotherapists who were working in the NHS, sport, private practice, education and private hospitals. Emails were sent to all regions of the UK to incorporate a range of training backgrounds and disciplines of work, and to highlight any geographical correlations. All invitation emails included an attachment of a participant information sheet and consent form. Participants were eligible for the study if they were Health and Care Professionals Council (HCPC) and Chartered Society of Physiotherapy (CSP) registered and that they had experience of working with patients following ACL surgery.

Out of the 24 participants, ten interviews were conducted via telephone. This was due to some participants living more than a sixty mile radius from the researcher. Fourteen interviews were conducted face to face at a location and time that was convenient for the participant. Official interviews were undertaken during a six week period. Participants were assigned a number to dictate the order in which they were interviewed. As well as sequencing the order for the interviews, this ensured that confidentiality and anonymity could remain throughout the entirety of the study. At the start of each interview, the researcher asked the participant to re-affirm their consent to the study and a written consent form was signed by the participant. A Dictaphone was used (with consent from the participant) to record the interview. On average, interviews ranged from 30 to 50 minutes which give participants sufficient time to discuss their experiences of using goals for patients who have undergone ACL surgery.

5.1.3 Interview Schedule and Measures

The semi-structured interview guide was constructed following the work from Barriball and While (1994). The interview guide aimed to obtain information from the participants about: understanding, delivery, effectiveness experiences and training of goal setting with patients who have undergone ACL surgery. The questions were largely framed in an open manner which enabled the interviewer to give a gentle prompt to the participant rather than giving too much direction during the interview (Brinkmann, 2014). The initial stage of the interview consisted of general demographic based questions. This was to give time at the beginning to establish a rapport before more specific questions about their goal setting approaches were asked (Reich, 2000). The first part of the interview explored the participant's area of work and his/her experience of working with patients who have undergone ACL surgery. Questions investigated the type of information the participant typically receives about a patient prior to the patient's outpatient appointment and information he/she tend to give the patient during his/her initial outpatient appointment. The second part of the interview explored participants' understanding and practical approach to goal setting within ACL rehabilitation. Questions included how he/she set goals with patients, whether he/she are guided by a particular framework or approach and patient involvement during the goal setting process. The third part of the interview explored physiotherapists' past training in goal setting and future training needs. Questions included whether he/she received any formal training in the goal setting process, would he/she like to receive any future training on goal setting. The interview guide is attached (see appendix E).

5.1.4 Analysis

The data was initially transcribed verbatim and analysed using Thematic Analysis. Thematic analysis which consisted of an inductive approach. Thematic analysis is a methodology which involves identifying themes through a process of careful reading and re-reviewing of the data (Rice & Ezzy, 1999, p. 258). This methodology employs an inductive approach where patterns or themes emerge from the data set (Hennik, Hutter, & Bailey, 2011). An inductive approach, as suggested by Braun and Clarke (2006) was used as this is not limited by frameworks or predetermined themes and can reveal unanticipated insights which may provide more richness to the data (Frith & Gleeson, 2004). In support of this, Hennik et al. (2011) suggests inductive analysis allows more complex issues to be broken down and understood in more detail. The structure used to analyse the data set was taken from Braun and Clarke (2006b) and is shown in Table 15.

Table 15: Phases of Thematic Analysis using an inductive approach

Phase	Description of the Process
Familiarisation Phase	Transcribing data, reading the data several times noting any thought processes in a journal.
Generation of Initial Codes	A thorough, inclusive and comprehensive collection of themes across the entire data set. All relevant extracts for all the themes have been collected and repeatedly checked back to the original data set.
Searching for Themes	Categorising potential themes into distinctive coherent themes.
Reviewing Themes	Reviewing themes and comparing with initial coded extracts (generation of codes phase) and creating thematic 'map' of the analysis.
Defining and Naming Themes	Refining specifics of themes, generating clear definitions and names for each theme.
Producing the Report	Selection of vivid, compelling extract examples relating it back to the research question, producing a scholarly report of the analysis.

All twenty four interviews were transcribed verbatim by the researcher within six weeks of the meeting. Transcripts were sent to all participants to give them the opportunity to confirm and authenticate all articulations. To ensure that trustworthiness was optimised, all participants member check emails and full interview transcripts are in volume 2 of 2 of the thesis. Any data obtained was stored on a University of Hull, password encrypted laptop and was in accordance with the research ethics university data protection act (Data Protection Act 1998). Only the researcher and research supervisor had access to the data. The researcher independently performed all of the processes following Braun and Clarke (2006b) suggested method. To ensure trustworthiness, suggested by Sparkes (1998), triangulation involved the researcher and a second reviewer independently coding the data. Peer debriefing involved the researcher presenting and explaining the coding processes and subsequent themes to the researcher's primary supervisor. Following peer debriefing, some amendments to the inductive approach, in particular re-structuring some of the categorisation of emerging themes were made. This was to ensure that all data was appropriately captured and interpreted effectively (Pitney & Parker, 2009). To ensure a level of rigour, all processes of the analyses are attached (See appendix F).

5.2 Results

Twenty four participants engaged in individual semi-structured interviews. Through inductive analysis, four key findings, which are later described as structural category location were identified: Communication, Knowledge, Training and Training needs. Table 16, presents these general dimensions in a systematically constructed framework as outlined by Bull, Shambrook, James, and Brooks (2005). This framework starts to elucidate key relationships and is structured in general dimensions, themes and structural category location. The general dimensions are said to reveal no new knowledge within the literature, however, it helps clarify a degree of meaning of the global themes that emerged from the data (Bull et al., 2005). The structural category location is the most important aspect of the framework as its category is formed as a result of the multi-layered global themes. The four emergent structural category locations were: Communication, Knowledge, Training and Training Needs. Each structural category will be discussed including the multi-layered global themes alongside commentary to explain the significance of each theme.

Table 16: General Dimensions, Global Themes and Structural Categories Resulting From the Analysis of the Goal Setting -Focused Interviews

General Dimensions	Themes	Structural category location
Patient Management	Informing the patient Patient expectations/ concerns Involving the patient Patient buy-in	Communication
Goal Setting	Goal setting approach Process of action planning Goal attainment	Knowledge
Training	Perceived skills Basic training SMART Clinical placement	Training
Training needs	Theory of goals Alternative approaches Setting goals Method of delivery	Training Needs

5.2.1 Communication (structural category location)

All physiotherapists discussed how they manage patients who have undergone ACL surgery, with a focus on how they use goal setting within this population. It was evident that communication, in its many forms, appeared to be a dominant feature within the physiotherapists' responses. Related emergent themes included: 'informing the patient'; 'addressing patient expectations/ concerns'; 'involving the patient'; and 'getting patient buy- in'. The type of information discussed with the patient varied during their initial physiotherapy consultation and key information such as late stages of rehabilitation was lacking at times. There appeared to be very little patient involvement at the beginning of the consultation, with communication being mainly practitioner led.

5.2.2 Global theme: Informing the patient (Communication)

Most physiotherapists acknowledged that ensuring the patient was fully informed throughout the physiotherapy consultation and rehabilitation process was of high importance. The information given to the patient focussed on the acute stages of rehabilitation and with little regard for the return to sport/function stage. However, physiotherapists described providing the patient with a basic general overview of the rehabilitation process:

'So usually it will be fairly straightforward of what the injury is, what the surgery consisted of and sort of a baseline of the ACL protocol' P5 Sport

'We'll go through the protocol with them and basically give them our expectations of the rehab, so it's mainly just verbal but quite often I'll give them a copy of the protocol so that they can take that home with them' P19 NHS

'We tend to give them a protocol which their surgeons love,, so we would give them that and say this is what we are going to do on a week to week basis, as things could change obviously' P18 Academic

'Once I have provided the patient with the relevant information regarding their rehab, the patient may ask specific questions of what they can get back to regarding their sport or function' P8 Sport

Only two physiotherapists mentioned that it was important to ascertain the patients' level of understanding by asking the patient to discuss what they understood before providing further details:

'I'd ask how much information they'd already received and how knowledgeable they were about the operation and what the rehab entails' P6 Sport

'Making sure you cover everything really. So normally we would discuss what they've had done, make sure they are aware of what they've had done and what their understanding is of what they've had done what the consultant has spoken to them about regarding protocol guidelines' P2 NHS

There is documented evidence to suggest that patients' require reassurance from their physiotherapist that their symptoms following knee surgery are within the norm (Westby & Backman, 2010). Only physiotherapist who worked in the NHS, felt it was important

to reassure the patient by giving him/her an outline of issues that can typically be expected at this phase of rehabilitation:

'A lot of the first attendance is about reassurance, giving them some understanding of what's normal in terms of symptoms at this point as the symptoms are so acutely after the procedure, reassuring them that a degree of pain and discomfort is normal and reassuring them that it's normal to have a warm swollen knee' P20 NHS

5.2.3 Global theme: Patient expectations/concerns (Communication)

When asked about the type information discussed during the initial post ACL physiotherapy appointment, five physiotherapists cited managing patient expectations:

'I just tend to kind of clarify with them as to their understanding of what's been done, what they're supposed to be doing now and their expectations of how long that rehab is going to take, whether there's been any changes during the surgery and the plan for how things are going to go over the rehab period' P13 Sport

'I think that initial one is very much a finding out what their expectations are, so any timescales that they've been given preoperatively seem to have gone out of their head so I spend quite a bit of time talking through the different stages of the rehab' P8 Sport

'When it comes to managing patient expectations, I don't like to say this is what you're going to do, instead, I think it's about asking them what do you want to achieve, what are your expectations, what are you hoping from physio and trying to marry them up with what we would expect' P19 NHS

Physiotherapists from all three fields emphasised addressing patients concerns more than addressing patient expectations. The majority of physiotherapists identified patients' concerns to be orientated around returning back to sport/function:

'There's definitely a mix of patients who just want to get back to lower level activity, whether it's running as a first step, so their concerns are when and whether they can get back to doing that and whether it would be competitive or just training' P22

NHS

'I think their return to activity tends to be their biggest concern, even if they're not worried about timescales, just the fact that 'will I be able to get back to doing football, rugby, skiing' whatever their activity is' P17 Academic

'I think the main concerns are re, re-ruptures of the knee and also in terms of getting back to sport, whether that be elite level or even just playing sport for a local team, are also their biggest concerns' P2 NHS

'In the sort of line of work that I'm in they want to get back to playing or participating in sport to the level they were at prior, you know pre-injury, you know that's what they always sort of tell us that' P16 Sport

Some physiotherapists perceived patients' concerns to be associated with post-operative symptoms. This may correlate with the fact that only one physiotherapist discussed common knee symptoms following ACL surgery with their patient:

'Early stages would be general things like pain and swelling and I think probably another would be if the patient who had a lot of giving way before surgery would still be apprehensive of it giving way and whether or not the surgery had helped with that' P3 Academic

'I think normally sometimes its pain, and normally like if they are having a bad day with it' P2 NHS

'In the early stages, they are often concerned about the inflammation that can occur in the knee especially around the incisions and the degree of pain they can often experience' P15 NHS

5.2.4 Global theme: Involving the patient (Communication)

There was limited evidence indicating any patient involvement during the beginning of the consultation. Patients only appeared to be involved towards the end of the goal setting process. However physiotherapists highlighted encouraging more patient involvement at later phases:

'I get them to write their goals down like a training diary and maybe come back I'll get them to almost break it down in the first sort of month to three months' P15 NHS

'I initially get them to choose what goals they want to do. We would then discuss whether their goal is realistic before writing them down. I often give the patient a copy of their goals just to remind them' P14 NHS

'The way I involve them is by asking them what their goal is and then I will work with them; so they tell me where they want to get back to and then from there I suppose I probably come in a bit more and say how we're going to achieve that through having a joint discussion and agree a plan' P4 Sport

5.2.5 Global theme: Patient buy-in (Communication)

When asked about patient commitment or patient buy-in to their rehabilitation, most physiotherapists felt that patient buy in could be noted by observing the patients' reaction following the session. It is notable that none of the physiotherapists mentioned obtaining feedback, or the importance of involving the patient in the goal setting process, both of which may contribute to patient buy-in:

'It would be a case of once you've set the goal, you can generally judge from them how committed they are to the session itself and to the process going forward' P5 Sport

'I go by how they react to the information they are given and the assessment and whether they actually do the stuff or if they have not bought in to their physio, its usually I hear they are back training or I will turn up at a game and they are playing and say should you be playing now?' P7 Academic

'I usually find I can tell whether patients are bought in to their rehab due to how engaged they are during the assessment' P14

'I think there is some truth whether patients are fully bought in to their rehab and that is evident as to whether they regularly attend their sessions and whether they are missing and why are they missing?' P24 Academic

From a patient-practitioner relationship perspective, only one physiotherapist suggested that effective patient buy in is a result of the relationship the patient has with the physiotherapist:

'A lot of the time in the way I set things, I find my patients come back to me time and time again. I think that is because I always make sure that I have a genuine rapport with my patient's and they like that, hence why they very rarely miss appointments' P1

NHS

5.2.6 Knowledge (Structural category location)

Setting goals [for patients] is a professional requirement set by the Chartered Society of Physiotherapy (CSP) and the Health and Care Professions Council (HCPC); therefore physiotherapists setting goals are expected to have detailed knowledge and understanding regarding this complex tool. Those interviewed highlighted a variety of aspects associated with goal setting, which may reflect the level of knowledge they have in this area. The global themes that emerged were; 'goal setting approaches', 'the process of action planning a goal' and 'goal attainment'. The process in which goals were set were predominantly physiotherapy mandated and very few described involving the patient leading the action planning. Goal attainment varied but the main approach to ensure a patient was on track to attain a goal focussed on a discussion between the physiotherapist and patient. Regular feedback was not highlighted as a method to assist with goal attainment.

5.2.7 Global theme: Goal setting approach (Knowledge)

The main goal setting approach that dominated the responses across sport, academia and the NHS was SMART goals (Specific, Measurable, Achievable, Realistic and Timely):

'There's the standard goal setting, when I say standard it's is the SMART goals. So that seems to be the standard framework' P12 Academic

'Yeah they are SMART because we have to look at specific goals, so at the end of the day If patient X wants to return to football we have to make that by looking at a realistic timeframe' P1 NHS

'Obviously your SMART measurable like an ongoing process reviewing it all of the time having short term that eventually leads to long term ' P2 NHS

'I would try and make them specific, measurable, achievable; so using the SMART acronym and I feel that using SMART goals you know exactly what you're going to be doing to achieve what you want to achieve' P4 Sport

Well just using SMART goals is what we do, so you know we'll looking at the rehab that we've got, breaking down and informing the patients what we want to do, what we'd like them to do with the amount of stresses they're putting through their knee and sort of talk through why these particular SMART goals, why they're useful at this stage'

P16 Sport

The only other goal setting approach highlighted was setting short and long term goals, however, only a few physiotherapists used short and long term goal setting:

'I tell the patient what I have found objectively and then I suggest the short term goal which is about improving range, improving your proprioception and balance and then I usually say to what do you want to get back to and we make the long term goal for that.

That's how I do it and that's how goal setting is' P7 Academic

'I use the term short and long term goals, but it's not a list I make at the beginning of the treatment, the short term goals develop as we go through a treatment'

P17 Academic

'We would discuss what we found through the objective assessment and what we need to do to set some goals and basically set them some short and long terms goals with them, so identify problems like we can't load for thirty seconds' P2 NHS

Only one physiotherapist described using any alternative approach. This was learning needs analysis, taken from a sporting background:

'Before I worked in professional sport, I'd never heard of needs analysis we use that needs analysis as a different way of looking at its not just you've got certain tests you need to perform. I've got fear of or hyper-vigilant response to activity and fear of pain

with that activity so how can we modify the approach as well, so it doesn't always have to be task orientated' P10 Sport

None of the physiotherapists who worked in the sporting environment mentioned any of the other goal setting approaches used in sports such as performance, process and outcome goals. In addition no physiotherapists referred to theory, or authors when describing goal setting:

5.2.8 Global theme: Process of action planning (Knowledge)

It was apparent that the majority of physiotherapists lead the process of goal setting with minimal participation from the patient:

'I tell the patient what I have found objectively and then I talk to them about it, I then suggest the short term goals' P7Academic

'So the goal setting process involves me setting that first goal for within the first two weeks and then as they're then moving up through' P8 Sport

'So I might talk to them about whatever the goal is that we've discussed and then I will break it down into smaller elements' P14 NHS

However, some physiotherapists described a more collaborative approach to setting goals with their patients:

'In order for us to go through setting goals, we discuss between us how we are going to break that down into smaller achievable components' P1 NHS

'The whole process of setting goals is discussing the goals in relation to the protocol that they should be following and then discussing the timeframes with the patient'

P3 Academic

'The process I use is quite often I'll say go away and have a little think about what you want to achieve and reflect on it and then through a joint discussion we then agree a set of goals between us' P19 NHS

None of the physiotherapists interviewed described using a pure patient led approach. There was no specific framework or set of specific processes that any of the physiotherapists identified regarding using goals. Some mentioned how they would discuss the goals then break them up in to smaller goals, but no one followed an actual process where the physiotherapist made sure the patient was committed to the goal, or highlighted that they spent time evaluating any barriers to the patient achieving the goal, nor was any goal progress feedback obtained.

5.2.9 Global theme: Goal attainment (Knowledge)

The findings indicate that there could be a general limitation in goal setting knowledge due to the lack of information discussed such as the wider aspects of goal attainment

which includes; self-efficacy, goal satisfaction, reinforcement of progress and goal importance. When the physiotherapists were asked about how they ensured that the patient attains the desired goal, the responses indicated that they often adjust the goal if they felt the patient was not going to achieve it. For those who would adjust the goal, there was no information on how the goal adjustment was performed, for example ensuring the patient disengaged from the previous goal and engaged with a new goal:

'So I always re-assess and if the goals are not going to be attainable, I would adjust them and explain it to the patient' P17 Academic

'It's looking at why or why aren't on to get to that goal, is it because they've not complied, is it because we've not done the right the thing, it is trying to address any issues by reassessing the patient and change the goal if need be' P19 NHS

'It's about adjusting accordingly to the situation and the patient in front of you, so if a patient's not able to hit that goal, first and foremost you would look back on why did that happen and if appropriate adjust the goal to make it achievable' P5 Sport

Some physiotherapists indicated they would ask the patient to discuss how they perceived their progress:

'Firstly I think assess from them and get them to reflect on how they think they're progressing' P20 NHS

'What I tend to do is to then ask the patient a little bit more about how they are working towards their goal because it's really trying to get into the nuts and bolts of these are the types of things you should be doing' P12 Academic

'I would ask the patient to give their view point on perhaps why is that not being achieved and having a discussion based around what they think about why they might not be on track to achieving their goal' P9 Sport

5.2.10 Training (structural category location)

It is a professional requirement that physiotherapists must understand goals and the need to set goals; therefore there is an assumption that goal setting training is an integral part of physiotherapy training. Physiotherapists discussed a variety of aspects which all revolved around training. The themes that emerged were 'perceived skills', 'basic training', 'SMART goals' and 'clinical training'. No physiotherapists discussed therapeutic rapport, psychological theories and the theory of goal setting. It is clear that the overall training regarding goal setting physiotherapists had received was minimal and that SMART goals appeared to form the main part of any education. At present it is not a mandatory requirement for clinical educators to undertake any additional training to supervise and educate physiotherapy students, despite this, the delivery of the physiotherapists' training had often occurred while they were on clinical placements from their clinical educator.

5.2.11 Global theme: Perceived skills (Training)

Physiotherapists were asked to highlight key skills they perceive to be vital when setting goals. The responses largely revolved around the importance of good communication skills:

'I think communication is huge, because it doesn't matter how good your goals are, if you've not communicated with your patient then there's not any point having the goals'

P4 Sport

'I think having effective communication with the patient because it helps in explaining why you're needing to set the goals and the importance of trying to stick to the goals.'

Especially with it being such long term rehab for ACLs' P3 Academic

'I think, first and foremost having really good communication skills are key when setting goals, so to me good communication skills means listening as well as being aware of the patient' P1 NHS

'I think to be effective at goal setting first you have to understand the processes involved in the ACL rehabilitation programme regarding healing time frames, exercise physiology and principles of strength and conditioning' P5 Sport

Some mentioned that it was important to have a good clinical knowledge of the rehabilitation process such as physiology and psychosocial understanding:

'I think certainly that with the ACLs it's not just that objective bit of assessing them what their function is, but it's very much having that clinical knowledge of psychological, physiological and psychosocial' P15 NHS

'I think they should have an anatomical understanding of what the procedure involves Physiological awareness in terms of healing time scales, probably a biomechanical understanding' P23 Academic

'I think first and foremost you have to understand the processes involved in the ACL rehabilitation programme regarding healing time frames, exercise physiology and principles of strength and conditioning' P5 Sport

5.2.12 Global theme: Basic training (Training)

It is clear that the training received on goal setting was minimal. A number of physiotherapists could not actually remember whether they received training or not:

'Yeah, I think I would be lying if I said I could remember, but I think we covered long and short term goals' P23 Academic

'I can't think specifically that we did you know I think we might have had one session on goal setting but I can't remember' P15 NHS

'I think we did some training in first year in regards to what SMART goals are, I think we did a couple of case scenarios on how to set them, I can't really remember much about it' P5 Sport

'It was more, what we tended to do with goal setting I suppose was of our long and short term goal. We had to present a case study and one of the things we had to discuss was a person's long term, short term goals' P1 NHS

'No there was a discussion on short, medium and long term goals, in the lecture hall setting or a lab based session' P10 Sport

'I think we had training, it was very much done that at the beginning on long and short term goals, you saw the patient at the beginning followed by a talk short and long term goals' P17 Academic

5.2.13 Global theme: SMART goals (Training)

None of the practitioners mentioned being taught theory on goal setting, psychological models associated with goal setting and how to practically implement goal setting. It was evident that SMART goals appeared to form the main part of the training, but this was minimal:

'I remember a lecture on it, because I remember the smart goals, so that was it really, it must be something I have learned' P19 NHS

'I do remember the smart side of things, I think we did actually go down that route and I believe it changed to smarter' P21 NHS

'I think we did some brief stuff on SMART goals. But I think it was more related to how we were how we were learning with minimal link to practice. I think it was more related to our degree than it was to doing it with patients' P14 NHS

5.2.14 Global theme: Clinical placements (Training)

The majority of physiotherapists indicated that their training regarding goal setting was not delivered at university, but while they were out on clinical placement. This would have typically involved an NHS physiotherapist teaching physiotherapy students' goal setting:

'I do remember one of my clinical educators going through it with me on placement because she said it is really useful for me to have gone through this and I think that is where I started to develop it within a fluid process ' P11 Academic

'I think the goal setting came from my clinicians when I was out on placement and they would say right, someone for instance has an ACL what's that long term goal and can you give me a week to week progression for that ' P18 Academic

‘when I was on clinical placement, I think we did some, but it mainly focussed on how to set short, medium and long term goals’ P9 Sport

5.2.15 Training needs (structural category location)

Physiotherapists were asked to discuss whether they would like further training in goal setting. There were a number of responses which resulted in four emerging themes including ‘theory on goal setting’, ‘alternative approaches in goal setting’, ‘practical aspects of setting goals’ and ‘preferred method of delivery’. These themes created an overall structural category of training needs. It is clear that the majority of the physiotherapists would welcome further training in goal setting. This supports the previous findings where goal setting training is somewhat insufficient. The physiotherapists also indicated a preferred method of delivery regarding goal setting.

5.2.16 Global theme: Theory of goal setting (Training Needs)

Goal setting is a complex intervention and is underpinned by numerous psychological theories and models. A number of physiotherapists indicated they would like to receive training on the theory of goal setting. It is apparent from the previous findings that physiotherapists did not refer to any theory of goal setting therefore suggesting that there is insufficient theory being taught in goal setting:

‘I think getting a greater theoretical understanding of it really, if you’ve got a greater understanding about the theory that underpins something then you’ve got a greater opportunity to use that correctly and understand the benefits of it’ P12 Academic

'I think it would be nice to have a little bit more theory on goal setting as I suppose it's kind of something I could find useful to have more of a formal knowledge of the theory'

P11 Academic

'I think it would be understanding the patient engagement and whether using a particular model of goal setting or understanding the theory of goals lends itself more to that compared to another model of goal setting I think I would certainly find it

beneficial' P20 NHS

5.2.17 Global theme: Alternative approaches (Training Needs)

A third of physiotherapists requested to receive specific training on alternative approaches to setting goals as opposed to SMART goals:

'I'd love to know some of the newer approaches and see whether it would be something that I'd look to incorporate, adapt, or swap across to, absolutely' P8 Sport

'So when I think I first think of the SMART acronym, so I think it would be good to look at other approaches, I think certainly taking on board it's not something I've probably thought of' P15

'If there was another way to approach it, I've very much done the same approach and if there was another way of, I'd certainly be willing to consider a different approach if that would work' P17 Academic

5.2.18 Global theme: Practical implementation of goal setting (Training Needs)

From a practical application of goals, some physiotherapists indicated they would like to receive training on how to apply goals:

'I don't know too much about how to set goals, so I guess it's a good thing to look at how to actually structure and set goals and looking in to the psychosocial behaviour'

P2 NHS

'I would like advice on how to set goals because I'm sure there's always going to be aspects of my goal setting application where I can always improve on' P4 Sport

'I think it would actually be worth doing a proper goal setting course cos I've never done one. Information on this is what we are going to look at, this is the theory to support goals, this is how you structure a goal setting plan to see if what I am doing fits with that, or I've got it completely wrong' P10 Sport

5.2.19 Global theme: Preferred method of delivery (Training Needs)

When the physiotherapists were asked about how they would like to receive their training, the responses were very different as to how they were previously taught (lecture based). They requested the training to be interactive, where a practical application of theory could be implemented:

'So I quite like that interaction in that real life workshop type stuff rather than a big lecture' P7 Academic

'I feel like an online workshop where you actually have to feed it into, into it rather than just listening to somebody or just reading type of thing' P22 NHS

'I could do a webinar and then go on a workshop for instance, because maybe doing a webinar would give me a skeleton framework and going to the workshop thrash it out.

That for me is a probably a good way to go' P10 Sport

5.2.20 Discipline related findings

There was only one distinct finding when it came to the physiotherapist's goal setting knowledge. Two physiotherapists who worked in sport appeared to have more surface knowledge in goal setting when compared to physiotherapists who worked in the NHS and academia:

'I think my main knowledge on goal setting comes from the sports science background I did in a previous degree' P24 Academic

In addition, some physiotherapists who were linked to sports, felt that SMART goals were not effective, but they were not able to discuss alternative approaches to goal setting:

'I'm aware of SMART goals but I wouldn't say I really use them as I don't like them when it comes to applying a rigid framework in the sports environment' P13 Sport

'When I worked in sport, I feel SMART is quite broad I don't think that lends itself to being transferable to a lot of different athletes' P12 Academic

'It's sometimes really difficult to measure a goal objectively, because it might just be that the patient wants to feel more confident when going up and down stairs' P8

Sport

5.3 Discussion

The aim of this study was to explore physiotherapists' experiences in using goal setting practices for patients following Anterior Cruciate Ligament (ACL) surgery. Four key structural category locations emerged from the data. Communication was greatly acknowledged in relation to managing patients during the patients' initial post-operative physiotherapy consultation. However, there were a number of concerns regarding how patients were being managed including: addressing patient expectations, patient engagement and patient education. Knowledge was another key category identified from the data. Having appropriate knowledge on setting goals and understanding the purpose of goal setting appeared to dominate some of the discussions. Despite the cited importance of knowledge in setting goals, evidence of demonstrating any underpinning psychological theory was minimal. In addition training was a third category that emerged from the data. It was apparent that the main goal setting approach used was SMART goals and most physiotherapists were unable to identify any alternative approaches to setting goals, or discuss a clear process when implementing goals. The final category that emerged from the data was training needs. The majority of the physiotherapists' welcomed further training in goal setting and a number of aspects of the goal setting process were highlighted for further training.

5.3.1 Communication (structural category location)

Communication appeared to be a major topic when physiotherapists were asked to discuss how they would manage patients' who had undergone ACL surgery. The results highlighted during the initial post-operative physiotherapy consultation the majority of the physiotherapists were not communicating using a patient/practitioner approach, instead the approach that was used was a practitioner/patient approach. From a goal

setting stand point, communication skills, in particular using a patient/practitioner approach is of paramount importance so that patients' views are elicited and incorporated fully during the goal setting process (Parry, 2004). Furthermore, using a patient/practitioner approach is said to incorporate more micro-counselling skills such as active listening, empathy and reflection which have been empirically shown to enhance a patient's psychological wellbeing during their ACL rehabilitation (Schwab Reese et al., 2012). Alami et al. (2011) highlighted that a practitioner/patient approach is often used due to the level of patient in-security and lowered confidence. The study suggested that patients may present with a degree of uncertainty regarding their medical/post-operative status, which subsequently can cause a passive response in order to allow the practitioner to discuss and make most of the clinical decisions regarding patient care (Alami et al., 2011). Although this study was not specific to ACL surgery, it may imply that patients are not fully involved and informed of their potential care from the outset. This was empirically supported by Braddock III, Edwards, Hasenberg, Laidley, and Levinson (1999) who explored and analysed the content of discussions between physicians and patients regarding orthopaedic surgery where 71% of the main discussions focussed on the surgical intervention and only 1.5% of discussions involved asking the patient's understanding. These findings suggest that ascertaining the patients' level of understanding of ACL surgery/rehabilitation during the initial physiotherapy consultation may allow an appropriate balance of bridging of any gaps in the patient's knowledge and enabling the patient to have more of a voice during subsequent clinical decisions that are made. Correspondingly, these findings were also reflected in the present study where only two physiotherapists asked patients to discuss what they understood about their ACL surgery and rehabilitation. Effective communication has many strands and one important strand is to ensure that the dialogue between the patient and practitioner is meaningful

and appropriate so that any goal setting strategies can be effectively utilised (Locke & Latham, 2013).

The present results highlight that the majority of physiotherapists were only involving their patients towards the end of their initial post-operative consultation, which was when goal setting strategies were employed. There are a number of benefits when involving the patient at the beginning of their initial physiotherapy appointment, including improved patient satisfaction, empowerment and increased patient adherence (Schoeb et al., 2014). In addition, involving the patient from the outset allows a more bio-social approach as opposed to a medical model of care (Mead & Bower, 2000). Involving the patient early on with their care and ensuring their views and opinions are valued is key to adopting a patient centred approach (Barron et al., 2007). Considering it is a professional expectation of NHS) policy that all care should be patient centred (Anon, 2005), the findings from this study suggest that patient centeredness is not being optimised for patients following ACL surgery. This could be partly due to the stage at which patients are being involved (during the goal setting phase). Evidence has shown that goal setting positively influences patient adherence within ACL rehabilitation (Brewer et al., 2000), therefore it would suggest that engaging the patients before goals are set may further enhance adherence.

Physiotherapists discussed the type of information they would deliver to their patients during their post-operative physiotherapy consultation. The information varied and there appeared to be a focus on the immediate/short term rehabilitation processes. Only a few physiotherapists discussed the late stages/return to play aspects of the rehabilitation. Furthermore, only two physiotherapists felt it was important to ascertain the patient's level of understanding of his/her surgery/rehabilitation before appropriate information was disclosed. Conceptually, ascertaining the patient's level of understanding at the beginning of the consultation may help identify any obvious gaps in the patient's

understanding. Literature suggests that fear of re-injury and or fear of movement is closely linked with the later stages of rehabilitation and return to play (Chmielewski et al., 2008). Joanna Kvist et al. (2005) revealed a distinct correlation of elevated levels of fear of re-injury for ACL patients who did not return to a previous level of function/sport. From a methodological perspective, the questionnaires used in this study were the Tampa Scale of Kinesiophobia (TSK) and the Knee Injury and Osteoarthritis Outcome Score (KOOS) which were not specific to return to sport/ play This study may have benefitted from using a more specific screening tool such as the readiness to return to sport such as the ACL–Return to Sport after Injury Scale which assesses emotions, confidence, and risk appraisals associated with returning to sport after ACL reconstruction(C. L. Ardern, Taylor, Feller, & Webster, 2012). This infers that psychological factors such as fear of re-injury are common within the later stages of ACL rehabilitation. Therefore this would highlight the importance of educating the patient on the later stages of rehabilitation to potentially minimise subsequent psychological distress.

It was acknowledged from the physiotherapists that managing patient expectations were of paramount importance. But the actual findings revealed that physiotherapists mainly focused on managing patients’ concerns as opposed to a balance of addressing both expectations and concerns. Furthermore, patients concerns were only discussed during the goal setting phase and not discussed at the beginning of the consultation. Giving patients early on an opportunity to discuss their expectations is an integral part of using a patient centered approach (Stewart, 2001). In addition, Kidd, Bond, and Bell (2011) conducted semi-structured interviews exploring patients’ perceptions regarding patient centeredness. The patients’ perceptions of patient centeredness were; active listening skills, time allowed for patients to contribute regarding their expectations and concerns. Hush, Cameron, and Mackey (2011) investigated factors that contribute to patient

satisfaction within musculoskeletal physiotherapy. The results reported that there were a number of factors that leveraged patient satisfaction rates such as therapists' competence and personality, sufficient education given to the patient, adequate time spent with the patient and one of the main factors was addressing patient expectations. There were a number of methodological flaws. The search strategy could have been more extensive regarding hand searching reference lists of rejected articles, exploring unpublished data, searching references within other domains such as conferences etc. In addition, there were no supplementary evidence to ensure rigour was optimised. For instance including the risk of bias checklist of both reviews to show that any agreement in the grading of the articles were fair. Nonetheless, this would imply that it is important that patient expectations are addressed early on in the consultation in order to promote patient buy in help create a more positive experience.

Patient education is a common intervention which is widely used amongst physiotherapists (Verma, Paterson, & Medves, 2006). The physiotherapists discussed the content of what information they would use to educate patients following ACL surgery. Topics seemed to focus on the early stages of rehabilitation and the type of surgical procedure that was performed. Important information was not discussed such as the late stages of rehabilitation and return to play/function. There was little regard concerning the common post-operative symptoms for example pain and swelling that occur following ACL surgery. Only two physiotherapists questioned the patients' understanding of their surgery and rehabilitation. This highlights that the overall structure and sequencing of questioning could be improved. Explaining common post-operative knee symptoms has been shown to reduce kinesiophobia, pain and catastrophizing according to Tichonova, Rimdeikienė, Petruševičienė, and Lendraitienė (2016). In addition, reducing any exaggerated negative reactions to pain through appropriate education may positively

enable a successful return to sport/pre-injury function (Tichonova et al., 2016). In support of this Moseley (2002) states that targeting a patients cognitive and behavioral aspect of pain through education aims to affect change through re-conceptualisation of their symptoms. Pre-operative education is common practice used within orthopedic surgery (Wilmore & Kehlet, 2001). Wilmore and Kehlet (2001) reported that educating patients on how best to manage their post-operative symptoms following knee surgery helps with pain control following surgery. In addition, educating the patient within the pre-operative phase may reduce the number of concerns that are discussed during their physiotherapy out-patient appointments. Although it may not always be possible to see a patient pre-surgery, pre-operative education should be a consideration to help maximise the patient 'satisfaction, commitment and rehabilitation potential.

It is acknowledged within the literature that physiotherapists working in an NHS setting are faced with challenging time constraints when treating patients (Lorig, 1995). Providing sufficient education requires time, therefore it would be reasonable to suggest that ascertaining patients' level of understanding prior to setting goals, may reduce any duplication of information, tailor information to patients' needs and enable the patient to make decisions that are meaningful to them. Only two physiotherapists in the present the study asked about the patient's understanding before providing them with the appropriate information. There are associated patient benefits when patients are given an opportunity to discuss what their understanding is concerning their surgery/injury according to M. Potter, Gordon, and Hamer (2003a). Patient benefits include a more tailored form of education provided by the physiotherapist, sharing power and responsibility by involving the patient, thus promoting a patient centered approach (M. Potter et al., 2003b).

Physiotherapists appeared to focus on discussing the early phases of ACL rehabilitation and very little was discussed regarding the end phases/ return to sport. Ardern et al. (2011), reported that two-thirds of athletes may not return to their pre-injury level of sport by 12 months following ACL reconstructive surgery, despite being physically recovered. This implies that psychological factors may have an important role in athlete return to play, Joanna Kvist et al. (2005) noted a similar finding who reported athletes often make decisions not to return to sport following injury or ACL reconstruction which were based on psychological hindrances, with fear of re-injury being one of those reasons. Johnston and Carroll (1998) exploration of athletes' perceptions and opinions of psychological support during injury rehabilitation revealed that the level of emotional and practical forms of support which were provided by a number of people including physiotherapists, families and friend decreased over a period of time and the patient's emotional stress was elevated towards the end of his/her rehabilitation. This would imply that there appears to be a lack of structure regarding how psychological support and education strategies are being employed for patients undertaking rehabilitation following ACL surgery. These findings suggest that psychological support strategies during the late stages of rehabilitation could potentially reduce any heightened negative emotional state that the patient may experience.

5.3.2 Knowledge (structural category location)

Physiotherapists were asked about their knowledge of goal setting, both from a theoretical and practical implementation perspective. Although the responses were similar, they were somewhat concerning. The approach that the majority of the physiotherapists used was SMART goals. All physiotherapists did not discuss any theory or processes that are associated with goals. All physiotherapists could not identify an alternative approach other than SMART. Only one physiotherapist who worked in sport used an approach called Learning Needs Analysis (LNA). From a practical perspective, all physiotherapists did not follow a process to setting goals such as the Latham and Locke (1991) goal setting framework. Setting goals in the absence of any structure or process might mean not all aspects of the goal setting processes are being followed. The use of feedback was under-utilised during the goal setting process. In addition, the delivery of goals appeared to be very physiotherapist mandated with very little patient involvement. Physiotherapists commented that they determined whether a patient was on track to attain a goal through their general discussions. No mention of the importance of regular feedback was discussed. This section discusses in detail SMART and short/long term goals, feedback and goal adjustment.

Research has identified a number of different goal setting approaches and theoretical models currently being practiced health care. In the healthcare setting, the most commonly used goal setting strategy is the specific, measurable, achievable, realistic and timely goal (SMART) (Playford et al., 2000). Although this approach is underpinned from an industry theory (Locke & Latham 1984), it has been identified by research to be effective using these strategies to improve patient outcomes and motivation during rehabilitation. However it is argued that not all SMART based goals are effective for all patients. Hartley and Stockley (2016) state that a range of goal setting approaches and

theories should be explored for complex patients in particular those who display cognitive or psychiatric symptoms. SMART goals are used within an NHS setting as they are said to be simple in terms of formulating the goal, time effective and objectively focussed (Parry, 2004). Despite this, there is a degree of controversy surrounding the effectiveness and implementation of SMART goals among healthcare practitioners (Levack et al., 2006b). An example of this was demonstrated by Hemmings and Povey (2002) who conducted a survey of qualified physiotherapists. The results showed that goal setting (SMART goals) was reported to be the most effective and commonly used psychological intervention, however it was reported that 49% of patients do not achieve goals. This may suggest possible issues with the implementation of SMART goals and/or only knowing one goal setting approach (SMART). There are a number of alternative goal setting approaches being used in the sports environment. These are known as outcome, process and performance goals as previously discussed in chapter three. A series of process goals must be set in order to attain a performance goal, for example ensuring appropriate alignment during kicking the ball (Kingston & Hardy, 1997). These goal setting processes used in sport have been empirically proven to improve athletic performance compared to a 'do your best' approach (Kyllo & Landers, 1994). Furthermore using process and performance goals are linked to enhancing athlete confidence and adherence (Kyllo & Landers, 1994). Considering the majority of patients who undergo ACL surgery are typically active and play sport (L. Anderson, 2006), using process and performance goals may be more appropriate as opposed to SMART goals. Using more appropriate goals for patients following ACL surgery may reduce common psychological symptoms such as fear of re-injury.

The use of short and long term goals is also an approach used in healthcare (Hartley & Stockley, 2016). These can be known within the literature as proximal (short term) and distal (long term) goals (Latham & Locke, 1991). There are arguably pros and cons when

setting short term goals compared to setting long term goals. Research shows that patients who set and attain short term goals have higher motivation and increased self-regulation due to the frequency of the patient being able to self-evaluate their progress (Schunk, 1990). However, there needs to be a balance when setting a short term goal as according to Locke and Latham (2006), setting a short term goal which is overly easy to achieve may not necessarily increase a person's motivation. It would seem that setting a goal which is moderately easy as opposed to overly easy appears to optimise self-regulation motivation (Bandura & Cervone, 1983). There are clear benefits and potential draw backs when using a particular goal setting strategy, the key message is that having an understanding of a range of goal setting approaches would enable the physiotherapist to effectively select the most appropriate goal strategy for the patient following ACL surgery.

The goal setting stages consists of a number of processes, all of which should be implemented in order to optimise goal attainment (Latham & Locke, 1991). Feedback during the goal setting process is seen as a vital moderator and is conducive to raising motivation and goal attainment (Bandura & Cervone, 1983). Without appropriate feedback, patients find it very difficult to adjust their level of performance in order to attain their desired goals (Locke & Latham, 2002). Furthermore, if a goal is agreed by the therapist and patient, using feedback can provide the patient with a reference point to give meaning to the patient's current status, which subsequently may cause psychological or physical changes in order to achieve the goal (Locke & Latham, 2006). Considering feedback was underutilised according to the physiotherapist responses, designing a goal setting framework where feedback is explicitly implemented may improve the way in which physiotherapists conduct action planning for patients following ACL surgery. Furthermore, using regular feedback may reduce some of the issues associated with goal

setting such as physiotherapists reporting patients to be setting ‘unrealistic goals’ (Brewer et al., 2000).

There are times when patients may not be on track to achieve a goal (Wrosch et al., 2003). If a set goal is no longer attainable, a possible solution would be to adjust the goal, as this has been found to reduce the negative impact on the person’s experience, reduce psychological distress, depression and improve subjective optimism (Schmitz et al., 1996). Most physiotherapists reported that they could tell through observation and/or general discussion whether their patients were effectively striving to achieve their desired goal or not. There was no mention of any specific strategies within a ‘general discussion’ such as goal dis-engagement and re-engagement. The purpose of goal adjustment through disengagement and re-engagement is to stop the patient from trying to attain something that is unattainable in order to prevent repeated failure and subsequent increase in negative mood (Wrosch et al., 2007). Therefore it is reasonable to suggest that if the patient is not likely to achieve the original agreed goal, disengaging and re-engaging with new goals using effective communication strategies may minimise a decline in the patients subjective mood state. However controversially, if patients’ has no alternative goal to use, it may have an even greater negative impact on the patient’s emotional status. Ensuring that the patient is always at the forefront of any goal setting or negotiation strategies should minimise any conflict or dilemmas as the patient is in a position of control over his/her treatment choices (Rachel A Barnard et al., 2010). This further emphasises the importance that all aspects of the goal setting process (goal planning, goal attainment) must be underpinned by patient centeredness. Creating a goal setting framework that echoes the importance of using a patient centred approach may benefit patients following ACL surgery from a self-efficacy, empowerment and shared decision making perspective.

5.3.3 Training (*structural categorisation*)

The amount of goal setting training received appeared to be inconsistent. SMART goals were identified as the main approach, but this was not necessarily taught with any underpinning theory. A third of physiotherapists felt their training in goal setting at university was minimal and that most of their training was something that they picked up whilst out on clinical placement. It might be suggested that goal setting may not have been seen as of great importance to some physiotherapists. In addition, a third of the physiotherapists, including those who had recently graduated, struggled to remember whether they received any training on goal setting, suggesting that goal setting may not have been viewed with any degree of importance. Over half learnt how to set goals on the job and received no formal training in goal setting at university. Goal setting is a psychological motivational intervention which has continued to evolve both from a theoretical and practical perspective and is used in many areas including sport, healthcare and the business industry (Locke & Latham, 2002). Despite this, it would seem that goal setting has not evolved within the physiotherapy curriculum. This can be traced as far back as post war times where physiotherapists who worked with soldiers who experienced shell shock repeatedly asked for more training in psychiatry, but this was deemed as ‘smoke and mirrors’ from their medical mentors who trained physiotherapists at the time (Alexanders & Douglas, 2016). During the 1980s the British Psychological Society (BPS) set up a working party to increase psychology awareness of other professions, physiotherapy at the time did not embrace this and continued to work through a medical model (Alexanders & Douglas, 2016). More recently, C Heaney, Green, et al. (2012) conducted a semi-structured interviews with seventeen UK physiotherapy institutions focussing on the psychology education within physiotherapy programmes. Results showed that the overall content and delivery of psychology was insufficient and inconsistent. Only four institutions had dedicated psychology modules and the remaining

thirteen tended to loosely incorporate aspects of psychology throughout the programme. Sixty five percent of the psychology content was delivered by physiotherapy lecturers who were not specialist psychologists, nor were physiotherapists with a specialism in psychology. It is arguable that goal setting has not evolved within the physiotherapy curriculum as psychology is viewed as lower in priority compared to core topics such as anatomy and physiology. S. Jevon and L. Johnston (2003) study exploring the attitudes of chartered physiotherapists towards the psychology content of their practice found participants appeared to demonstrate extensive knowledge surrounding the psychology of the injured athlete, however their knowledge was based on experiential experience and was not supported with any theoretical foundation. Not providing physiotherapy students with the necessary underpinning psychology theory could potentially impact negatively on post graduate practice and mentoring future physiotherapy students. Future review of the psychology content of UK physiotherapy curriculum should be given serious consideration from the HCPC and CSP where psychology related topics should be included more within the indicative content of physiotherapy programme.

5.3.4 Training Needs (structural category location)

Physiotherapists discussed the types of skills and training required to be effective at goal setting. The topics identified were having knowledge of the rehabilitation process regarding tissue healing and good communication skills. However, when physiotherapists were asked whether they would like to receive further training on goal setting, most welcomed further training. They also identified specific aspects of the goal setting process they would like further training on, which interestingly did not match their perceived skills required to be effective at setting goals. Training needs included: understanding the theory of goal setting, having an awareness of alternative approaches to goal setting, how to implement goals and the type of delivery of the training.

It is acknowledged that to provide sufficient and meaningful theory which underpins goal setting is beyond the scope of this thesis. Goal setting is a complex motivational tool which is underpinned by numerous theories to name a few: the trans-theoretical model (Prochaska & Velicer, 1997), the Self-Determination Theory (Deci & Ryan, 2008), the Social Cognitive Theory (Bandura, 1991) and the Locke and Latham model of goal setting (Locke & Latham, 2002). To address the lack of psychological knowledge, psychology education within UK, physiotherapy programmes would benefit from a full curriculum review which involves discussions with the CSP and HCPC to start addressing this large scale issue. One potential impact of this thesis would be to assist in raising these concerns within one area of psychology education (goal setting). The other consideration is that physiotherapists who participated within this thesis has identified how they would like to receive training in goal setting. These methods were very different compared to what they previously received at university (lecture-based) and consisted of interactive workshops, online and application sessions. This is supported by Arvinen-Barrow et al. (2008) who surveyed physiotherapists regarding their preferred method of sport psychology training. The results corresponded with the outcome of this study where workshops and interactive sessions were physiotherapists' preferred learning styles. These findings suggest that the current method of delivery of goal setting should consider other methods of delivery where students can apply the principles of goal setting to help prepare them for professional practice.

The findings have identified that there are aspects of the goal setting processes that are not being implemented. For example feedback being underutilised, inconsistencies in patient advice, lack of patient engagement and physiotherapist mandated approach. Overall, there is no specific process or framework being followed, which may explain why important aspects of the goal setting process are not being used. It is therefore no surprise that one aspect of the physiotherapists' training needs is to understand how to

effectively set goals. There are some good practices of goal setting frameworks/models. For example Locke and Latham's goal setting high performance model (Locke & Latham, 2013). This model is non-specific to an area (healthcare, sport, industry) so that this model is versatile to be used in a number of areas. Scobbie et al. (2011) has a framework which is predominantly within a broad area of rehabilitation, including stroke, therefore the focus of the framework that is used focuses on targeting behaviours and implementing strategies to influence behaviour change. Although this approach may appear more clinically relevant as opposed to Locke and Latham's, there is nothing as of yet specifically designed to assist physiotherapists who work with patients following ACL surgery. Finally Arvinen-Barrow et al. (2013) designed a goal setting process for sports injuries. This framework is more clinically relevant to a sports rehabilitation setting. There are however a number of processes to this model and some of the issues identified from this thesis are not addressed in this model. Despite the fact there are some goal setting models that exist, none of which address the true issues identified from this thesis and are pertinent to the area of ACL rehabilitation.

5.5 Conclusion

Considering goal setting is a professional expectation from the HCPC and CSP, the level of training to meet this professional expectation is somewhat insufficient. Goal setting is a complex motivational theory which is multifactorial; therefore setting SMART goals with minimal underpinning theory may provide some explanation as to why many articles raise a number of issues regarding its effectiveness amongst physiotherapists. There appears to be a degree of inconsistency regarding the cited importance of psychological related topics and the demonstrated psychological consideration due to a limitation in knowledge. Goal setting practices appear to be in absence of any process or framework, despite there being a number of goal setting models within the literature. It is clear that

the findings from this thesis not only highlight issues associated with how goal setting practices are used for patients following ACL surgery, but there are obvious concerns regarding how patients are being managed during their post-operative physiotherapy consultation. Having a goal setting model which incorporates a pre goal setting phase may allow a more patient centred approach. This phase would ensure that patients are given an opportunity to express their expectations, values and beliefs before the implementation of goals. The second phase would involve a collaborative goal setting approach where all important aspects of the goal setting process are jointly discussed so that patients are given a degree of goal ownership prior to their rehabilitation journey. A post goal setting phase may also be used to ensure that patients are provided with the appropriate support strategies e.g. reinforcement, self-management, regular feedback and advice and guidance to ensure that goal attainment is optimised.

5.4 Limitations

This study was a UK-based study. Having explored these practices from an international perspective may reveal similar patterns of practice or may have highlighted alternative practices that could be learnt from. Other limitations to this study can be considered in relation to the researcher's inexperience in qualitative research, in particular conducting interviews, which may have led to missed opportunities when encouraging a participant to expand on an insightful comment or example.

5.5 Future directions

Future research quantifying the type, amount and the method of delivery surrounding the goal setting literature and comparing UK versus international is considered vital. This would enable appropriate dissemination strategies of the proposed model to be employed so that graduate physiotherapists are prepared for practice. The final chapter proposes a goal setting model which is specific for physiotherapists working with patients following ACL surgery.

Chapter 6

A Conceptual Physiotherapy Goal

Setting Model within Anterior

Cruciate Ligament Rehabilitation

Chapter 6 - A Conceptual Physiotherapy Goal Setting Model within Anterior Cruciate Ligament Rehabilitation

6.0 Overview of findings

This thesis has unpacked and further examined the variables and evidence associated with goal setting within an ACL rehabilitation context. The thesis highlighted a number of key findings. It would appear that SMART goal setting is a dominant feature within clinical practice and is perhaps an attractive tool due to its simplicity (Levack et al., 2014). However, goal setting with patients is in fact extremely complicated and operates on multiple levels. The relationships between goals, mood, motivation and other interpretations make it incredibly challenging (Levack et al., 2014). Therefore, one goal setting approach does not fit all scenarios. There is a range of literature broader than cross sectional studies within sport psychology literature (Evans & Hardy, 2002), business (Locke et al., 1988) and healthcare (Levack et al., 2006a) that corroborate goal setting is effective in improving self-efficacy, treatment compliance, self-regulation, team working and overall patient outcomes. In contrast, a mixture of quantitative and qualitative empirical studies pertinent to clinical rehabilitation have also outlined a number of reported issues associated with goal setting. These issues are poor patient adherence (Bassett & Petrie, 1999), increased anxiety (Jack et al., 2010), poor communication (Parry, 2004), and goals not being patient-centred (Leach et al., 2010). For goal setting practices used within ACL rehabilitation to be worthwhile a transformational treatment tool, it is imperative that physiotherapists understand the conceptual and theoretical aspects of goal setting. The present research has identified a 'sweet spot' (shown in Figure 6) between physiotherapist consultation practices and physiotherapy goal setting practices that highlights behaviours that would benefit from a more stratified approach.

These areas for transformation are highlighted in Figure 6 Relationship of reported experiences from chapter 4 and 5:

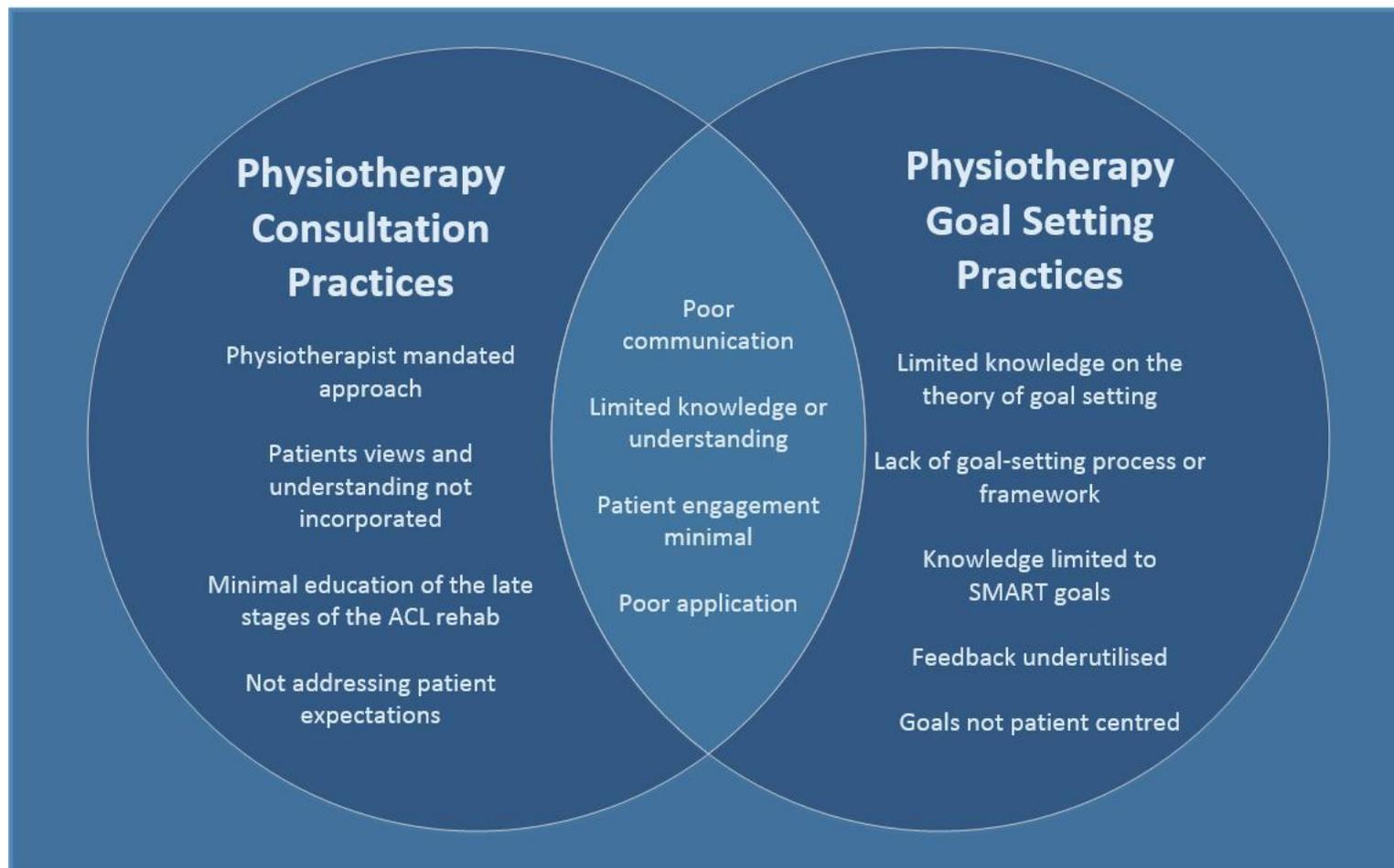


Figure 6: Relationship of reported experiences from chapter 4 and 5

The Chartered Society of Physiotherapy recently set out a three year corporate strategy for 2017-2020, where its primary vision is to ‘transform the health and wellbeing of individuals and communities by empowering our members and exerting our influence’ (Anon, 2017). Comparing the CSP strategy to the findings from this thesis highlights that the approach physiotherapists are presently using to manage patients during their initial ACL consultation and rehabilitation is not meeting the vision of the CSP. Figure 6 shows a conceptualised goal setting model that incorporates CSP strategy by emphasising the use of using a theoretically underpinned patient-centred approach. From a clinical application perspective, using a model provides physiotherapists with a process so that all important aspects of goal setting are incorporated and performed in a structured manor. The specific ordering of the model ensures that patient engagement is consistently incorporated, thus enhancing a greater therapeutic alliance. It is therefore proposed that a conceptualised physiotherapy goal setting model is a necessary path a physiotherapist and patient must journey together in order to build a successful relationship will better develop physiotherapist awareness of the multi-stages of goal desires, intentions, commitment and attainment. The goal of the present chapter is to outline a multi-phase conceptual model of an appropriate ACL rehabilitation goal setting strategy for physiotherapists in an attempt to guide both practice, teaching and research.



Figure 7: A Conceptual Physiotherapy Goal Setting Model within Anterior Cruciate Ligament Rehabilitation

6.1 Theoretical Constructs to Support Proposed Goal Setting Model

6.2 Pre-goal Setting Phase (physiotherapy consultation)

6.2.1 Aims and evidence to support pre-goal setting phase: Empower

The aim of the pre-goal phase is to establish a good therapeutic relationship between the patient and physiotherapist so that any medical decisions and goal setting interventions incorporated, will always be in concordance with patient's values. During the initial consultation phase, immediately engaging the patient by giving him/her the opportunity to give valuable input based around his/her beliefs and perceptions, not only empowers the patient, but also it facilitates a more patient centred approach (Mead & Bower, 2000). In addition, addressing patient expectations and concerns within the initial consultation phase may facilitate a greater therapeutic alliance. These important early interactions are framed by the patient-practitioner collaborative model (Jensen & Lorish, 1994) where finding common ground through mutual inquiry places the patient at the centre of any clinical decisions that are made regarding his/her care.

Considering the patient's social dimensions (asking the patient to describe their home, employment, hobbies and interests) in conjunction with the type of ACL surgery the patient has received, may provide the physiotherapist with more insight in to patient's behaviours, motivation and personalities which are factors that are integral to the implementation phase (Locke & Latham, 2013). It is important to give the patient an opportunity to discuss their motivation as opposed to the physiotherapist making assumptions based on the patient's behaviour. Maclean, Pound, Wolfe, and Rudd (2002) investigated physiotherapist's perceptions and experiences of patient motivation. Results indicated that physiotherapists were wrongly categorising patient's motivational status

based on pure observations, including: passiveness, quiet and behaving in a non-interactive manner. Despite the way patient's present during their appointment, they may still be very motivated to do their best within their ACL rehabilitation. This implies that physiotherapists understanding on motivation may be somewhat cursory. Self Determination Theory (Ryan & Deci, 2000) is one theory can could help physiotherapists understand patient motivation as it consists of a framework of theories concerning the study of human motivation and personality (Ryan & Deci, 2000). SDT explores why people display certain behaviours, in particular intrinsic and extrinsic motivation in cognitive and social development in individuals (Sheldon et al., 2004). During the past decades, SDT has focussed on the concept of self-regulation, which comprises both intrinsic motivation and well-internalised extrinsic motivation (Ng et al., 2012). Intrinsic motivation involves demonstrating a particular behaviour because the activity itself is of interest to the individual and deeply satisfying (Deci & Ryan, 2008). In contrast, extrinsic motivation involves engaging in an activity as it leads the individual to a separate consequence (Deci & Ryan, 2008). Understanding the distinct differences of motivation is important as this forms the basis of how goals are then set (Sheldon et al., 2004). Therefore, asking the patient within the consultation to express their views of their motivation may assist the physiotherapist in using more innovative exercises that are meaningful to the patient's motivational needs. For instance, if a patient is extrinsically driven to return to professional football, then using sports specific movements within the rehabilitation process may strengthen the patient's level of engagement. Similarly if a patient's desire is intrinsically driven, tailoring the patients rehabilitation around their personal enjoyment may facilitate a greater level of adherence.

It is important within this phase of empowerment to understand and address patients' expectations and concerns. Within Chapter 5, it was reported that physiotherapists were

only addressing patients concerns and not addressing any expectations. Understanding patients' expectations is of paramount importance, as it may require the physiotherapist to implement more education if expectations are unrealistic e.g. the patient expecting to run within the first week following ACL surgery. Furthermore through discussions both patient and physiotherapist emergent expectations may help identify whether there are any conflicting views that may need addressing. For example, the patient may expect to attend physiotherapy every day compared to NHS expectations of once a week. M. Potter et al. (2003b), conducted a focus group based study investigating both the patients' and physiotherapists' perceptions of patient expectations in private practice. The results revealed that physiotherapists' expectations of patients were being punctual, gaining respect and trust, whereas as conversely, patients' expectations were more physical related, including symptomatic relief and a 'hands on treatment' approach. Although these patients did not specifically undergo ACL surgery, they did experience musculoskeletal injuries including lower limb trauma. If these expectations were raised with patients following ACL surgery, then explaining the reasons why this could not be met due to ACL rehabilitation being largely exercise based could potentially minimise patient disappointment.

One of the most striking findings from the interview study (Chapter 5) and the survey study (Chapter 4), is that the level of practitioner education on goal setting varied and was minimal. Therefore, the pre-goal setting phase is specifically structured so that engaging the patient gives them the confidence and opportunity to express their expectations, concerns and understanding of their surgery/symptoms. Following this process should provide the physiotherapist with an understanding of what the patient's needs and educational requirements are. For instance, a patient may show good insight in to their rehabilitation/ surgery, but they may lack knowledge regarding common symptoms

following ACL surgery. Not only would this enable the physiotherapist to bridge the knowledge gap, but discuss this in context to the patients social and life circumstance. This approach is not only is framed within a theoretical construct such as the patient practitioner collaborative model (diagnostic process through mutual enquiry; (Barr & Threlkeld, 2000), but it is hoped to empower and promote patient commitment prior to any goal setting strategies that are implemented.

Overall, the pre-goal setting phase is a preparatory phase whereby good therapeutic alliance based on a number of communication processes (engagement, addressing expectations and appropriate education) may empower patients to effectively engage more within the goal implementation phase and create a greater level of adherence towards their rehabilitation.

6.3 Goal Implementation Phase

6.3.1 Aims and evidence to support pre-implementation phase: Strive

The aim of goal implementation phase is to give the patient the opportunity to confidently discuss their goal intentions having built a rapport and engaged them from the pre-goal planning phase. This phase allows the physiotherapist to help influence various processes such as selecting the most appropriate goal strategy that meets the patients' needs and proposed implementation strategies on how best to achieve the goals. The thesis highlighted that there were various concerns regarding a lack of process when setting goals within ACL rehabilitation. Only one goal strategy was used, SMART which was physiotherapist led. Having an understanding of a range of goal setting strategies may aid the physiotherapist to select a strategy which is more suitable for the patient's needs. For

instance, patients who have undergone ACL surgery and are high level sport performers may benefit from outcome, process and performance goals. These goal setting processes used in sport have been empirically proven to improve athletic performance compared to short/long term goals and SMART goals (Kyllo & Landers, 1994). In support of this, sport is best conceptualized as a continuum where outcome goals is at the end of the continuum (to win a competition), process goals (personal outcomes e.g. to run the race in 55 minutes) are at the opposite end and performance goals (strategies to improve form and technique of the sport) are midway between the two (Horn, 2008). Although these are sporting examples, this could transferable to the non-sporty ACL patient. For instance: an outcome goal could be to ascend stairs. A performance goal could be to ascend stairs without any elbow crutches. A process goal could be to use appropriate knee and ankle strategy in order to effectively ascend the stairs. Outcome, performance and outcome goals are said to be more successful if the goals are made more difficult to achieve would be more specific to the athlete as these factors are both believed to be vital to optimise success, which are vital to optimise success (Tubbs, 1986; Weinberg & Roberts, 1992). The benefits of focusing on process and performance goals according to Burton (1989) is that competitive cognition and performance are promoted. In addition intrinsic motivation and self-determination occurs when athletes feel confident and competent as a result of having control over their goals (Burton, 1989). Research has shown that athletes prefer process, progress and outcome goals compared to other goal strategies (short and long term, SMART) goals as they perceive to have more personal control (Evans, Hardy, & Fleming, 2000).

However, there may be patients that would benefit from using SMART goals (Playford et al., 2000). Although this approach was originally underpinned from an industry theory (Locke & Latham 1984), it has been identified by research to be effective using these

strategies to improve patient satisfaction outcomes and motivation during rehabilitation. Patients who set and attain short term goals results in them having higher motivation and increased self-regulation due to the frequency of the patient being able to self-evaluate their progress (Schunk, 1990). Therefore, having a degree of flexibility regarding goal strategy is important when working with patients following ACL surgery as some patients who are not from a sporting background may benefit from a SMART approach and athletes or amateur sports performers may be more receptive to process and outcome goals. Therefore, not labelling the goal strategy component of the implementation phase would encourage physiotherapists to draw upon their clinical reasoning skills to justify their goal strategy. To illustrate the aforementioned, a SMART approach to optimise vastus medialis oblique (VMO) function following ACL reconstruction would be instructing the patient to sit on the floor and perform a static quadriceps exercise (specific), holding the contraction for 15 seconds (measurable and realistic), and continuing this for two weeks (timely). An alternative to this would be taking the process element and making it relatable to the patient's social circumstance. An example of this would be to ask the patient to perform a mini squat in standing when making a cup of tea, or brushing his/her teeth, holding the squat for 15 seconds and repeating the exercise 8-10 times is still targeting the VMO muscle group, but the process of this is more functional.

While it is important to use the most appropriate goal strategy, the actual setting of the goal the goal is said to be equally important (Burton, Weinberg, Yukelson, & Weigand, 1998). Once the goal has been identified and a strategy has been identified specifically setting it as a goal for example *'are you happy that the goal we are going to set is this and this is the strategy we are going to use to help achieve this goal'* provides not only clarity of both parties, but allows the patient to re-affirm their specified goal (Bovend'Eerd et al., 2009). The findings of the thesis indicate that physiotherapists

working with patients in ACL rehabilitation are predominantly using a physiotherapist mandated approach. Research suggests that a collaborative approach would be more appropriate as this this would continue to work within the patient practitioner collaborative model (Jensen & Lorish, 1994), thus promoting patient centeredness. In addition any discussions during this phase can be negotiated and mutually agreed between the patient and physiotherapist (Barr & Threlkeld, 2000). By using a collaborative approach, the physiotherapist can facilitate a discussion where the patient has the opportunity to discuss their goal intentions (*I would like to reach Z*) and, following on from this, the physiotherapist may advise potential goal implementation plans (suggesting a plan of how to help achieve Z). Furthermore, the physiotherapist would be able to provide situational cues for the goal intentions (identifying opportunities to pursue the goal or how to overcome potential barriers) (Gollwitzer & Oettingen, 1999). Forming a strong link between the ‘I would like part’ (goal intention) and ‘how to do part’ (goal implementation), patients are then in a better position to ‘act in situ’, without having to deliberate on when and how they should act (Brandstätter, Lengfelder, & Gollwitzer, 2001). These important processes during the goal implementation phase are said to be vital in order to achieve goal striving (Gollwitzer & Oettingen, 1999). The patient would be managing the agreed plan often in their own environment, therefore feedback from both the patient and physiotherapist at this point is important to ensure both parties are in agreement with the plan and any concerns could be discussed.

Influencing patients’ abilities to self-regulate by discussing goal intentions and goal implementation also meets the visions for the CSP corporate strategy where by 2020 all physiotherapists should be empowering, influencing and transforming patients’ well-being and life potential. Furthermore, this proposed model could be beneficial for improving patient adherence during ACL rehabilitation, in particular home exercise

programmes. From a SDT perspective, incorporating a collaborative approach during the goal implementation phase would enable the physiotherapist to respect patients' views (relatedness) and give them choices over their ACL rehabilitation, thus facilitating a more autonomous approach to managing symptoms and patient goal intentions (Ng et al., 2012). Combining goal intentions with an appropriate goal strategy is said to improve goal commitment (Brandstätter et al., 2001); however Oettingen and Gollwitzer (2000) suggest that patients can be very committed to a goal when their success expectations are high, but can refrain from goal commitment when success expectations are low. Ensuring that patients' expectations are managed during the initial consultation (pre-goal setting phase) could strengthen their commitment during the goal implementation phase; thus optimising goal success.

In insightful finding from the thesis is that physiotherapists were addressing patients concerns and informing them of the rehabilitation process at the same time when setting goals. A benefit of having a pre-goal setting phase which is separate to the implementation phase is that patients would have had a period of deliberation from having their expectations/concerns addressed and to have been informed of the process (education). This may provide them with more clarity of what they would like to achieve during the implementation phase (Gollwitzer, 1990). The proposed structure can also be related the Rubicon Model of Action Phases (Gollwitzer, 1990) where in order for patients to be in a position to commit to their goals, crossing a Rubicon from pre-decisional (thinking of a range of wishes/goals) to pre-action (implementing goal directed behaviours) is an important transition. The influence of the physiotherapist during the implementation phase is of high importance as their expertise regarding tissue healing, training effects and appropriate exercise planning will be discussed in context of the patients' goals.

6.4 Goal evaluation phase

6.4.1 Aims and evidence to support goal evaluation phase: Attain

The goal evaluation phase aims to provide a two-way evaluation process where feedback is given from both the patient and physiotherapist. It also creates an opportunity within this process to discuss future thoughts from a self-management perspective and allow the patient to either maintain their original level of aspiration if they felt attaining their goals during this process was challenging, or whether they wish to further challenge their aspirations to a higher level. Linking with the CSP 2020 corporate strategy, all three visions would be met (empower, influence and transform).

The evidence that emerged from the thesis indicate that feedback is underutilised during the goal setting process within ACL rehabilitation. Kluger and DeNisi (1996), suggest that feedback should be discussed by both the physiotherapist and patient. In support of this, feedback from both parties is suggested to influence locus of control within 3 hierarchically organised levels: task learning, task motivation and meta-tasks (including self-related). Therefore feedback is an essential part of this proposed goal setting model as it aims to track patients' progress, monitor goal commitment and review the task complexity of the goal (Locke & Latham, 2006).

The results from the thesis revealed that goal evaluation was minimal, and physiotherapists largely evaluated patients' progress or regress on attendance and assessment findings. Goal evaluation according to Schunk (1990) should be focussed on the patient self-evaluating his/her performance. The actual Order of feedback may be of benefit for patients following ACL surgery. For example, allowing the physiotherapist to feedback first regarding patient's clinical progress (movement, strength and performance) may facilitate the patient to not only reflect deeply upon feedback given, but to self-

evaluate their progress and allow them to give a rounded perspective of their own progress/experience. Patients may then choose to self-observe, self-judge or self-react based on feedback given by his/her physiotherapist (Schunk, 1990).

There are a number of reasons why patients may not progress with their rehabilitation. For instance, medical related issues (surgical complications), changes in life circumstances, and psychological concerns (fear of injury) (Heijne et al., 2008). Therefore, the goal evaluation phase could act as a predictor as to whether goal attainment is likely to occur. These factors were considered and included in the evaluation phase is the use of goal adjustment. When a goal is no longer attainable, being flexible by adjusting the goal has been found to reduce any negative impact on the patient's experience, reduce psychological distress, such as depression, and improve subjective optimism (Schmitz et al., 1996). The purpose of goal adjustment through disengagement and reengagement is to enable the patient to quit trying to attain something that is unattainable to prevent repeated failure and subsequent increase in negative mood (Wrosch et al., 2007). Re-engaging a goal by newly selecting an alternative goal helps promote the patient's sense of identity and enhances the patient's subjective well-being, which may increase his/her motivation to achieve the goal (Wrosch et al., 2003). In contrast, Wrosch et al. (2003), states that patients may have no alternative goals that they deem meaningful to attain. This could exacerbate feelings of failure and possibly induce stress if an alternative goal was not selected. To substantiate this point, Covassin, Beidler, Ostrowski, and Wallace reported that an increase in stress levels in athletes undergoing injury rehabilitation can also lead to a feeling of isolation, subsequently reducing motivation and adherence to rehabilitation.

By receiving feedback from both parties, evaluating progress and goal attainment may provide an opportunity for future planning or preparation for discharge such as exploring new challenges, or maintain patients' aspirations to continue to work hard at their rehabilitation. From a late stages of rehab/discharge perspective, Johnston and Carroll (1998) explored athletes' perceptions and opinions of psychological support during injury rehabilitation. It transpired that the level of emotional and practical forms of support which were provided by a number of people including physiotherapists, families and friend decreased over a period of time and the patient's emotional stress was elevated towards the end of his/her rehabilitation. This would imply that there appears to be a lack of structure regarding how psychological support and education strategies are being employed for patients undertaking rehabilitation following ACL surgery. These findings suggest that psychological support strategies during the late stages of rehabilitation could potentially reduce any heightened negative emotional state that the patient may experience. Therefore, the importance of discussing self-management strategies within the goal evaluation phase could provide patients with further psychological support.

6.5 Clinical implications of the proposed goal setting model

Modern day NHS ACL post-operative rehabilitation protocols only provides physiotherapists guidance on the initial assessment which includes range of movement, strength and function and the physical outcomes that should be achieved within a specific time frame (Anon, 2014c). There is no guidance on goal setting, education and or communication strategies, which are all important aspects of ACL rehabilitation (Thomee et al., 2006). By incorporating the proposed model within the protocol may of value as a clinical tool. The simple but clear model may act as a visual reference to ensure that physiotherapists are incorporating all aspects of the goal setting process. In addition,

copies of this model could be displayed in physiotherapy cubicles and within hospital gymnasiums where the majority of ACL rehabilitation is conducted. Furthermore, this model immediately provides structure so by following the model, patients are involved from the outset and are continued to be central to the goal setting process. From a clinical documentation stand point, over the past decade physiotherapy notes has evolved from hand written to electronic (Partia, 2015), therefore this model could be imbedded in to electronic health records as a clinical guide. The model endorsed here provides a foundation in goal setting from which future research and practice can begin to explore the relationships between the phases.

6.6 Teaching and education implications of the goal setting model

Education in physiotherapy goal setting is reported throughout this thesis as being insufficient. Empirical evidence suggests that from a wider educational context, a mixed methods study of 17 United Kingdom Universities demonstrated that although some psychology training is included in physiotherapy programmes significant disparities exist in the extent of training provided and how it is delivered (C Heaney, Alison, et al., 2012). Furthermore, according to Watson (2013) social and psychological topics are often given a low level of priority when it comes to educating undergraduate physiotherapy students. Consequently, students are rarely given the tools to effectively assess or identify the psychological needs of patients (Watson, 2013). Although it is not within the scope of this thesis to address the large scale issues surrounding the broad topic of psychology education within Physiotherapy Programmes, attempting to bridge the gap within the goal setting literature in physiotherapy training could be a starting point.

The data from the present thesis identified that training in goal setting was perceived to be inconsistent, minimal and its main delivery was lecture based and clinical placements. Furthermore, future training requests in goal setting were based on improving understanding of the theories that underpins goal setting, practical application of goal setting and alternative approaches to goal setting. The preferred method of delivery was an interactive approach such as online workshops or practical. The ideal would be to have a number of contact sessions within physiotherapy degree programmes on goal setting to sufficiently deliver theoretical content and give students an opportunity to apply their knowledge. This however would not be realistic as many university institutions are faced with challenges of reducing teaching content and promoting more online teaching. Over the past decade, there has been a considerable shift in teaching and learning from traditional face to face lectures to more online based lectures (Laurillard, 2013). These changes have been implemented based on previous research showing that student engagement and their ability to think critically is not optimised within the classroom setting (Schmidt, Wagener, Smeets, Keemink, & van der Molen, 2015). There are many benefits associated with online learning, these are: students learn at their own pace, they learn in their own time and they process the information that is on the screen in absence of the lecturer presenting additional information, which may be overwhelming (Schmidt et al., 2015).

6.7 Practical application

The delivery of this model could be delivered in two levels. Level 1 could be front loading, where the student is provided with online lecture captures of relevant goal setting theory, goal setting process and goal setting strategies. Lecture capture is becoming increasingly popular within teaching as it can enhance the students learning experience (Witton, 2017). In addition, lecture capture supports the modern day student who may have to undertake

work while studying at university by enabling them to receive the same level of teaching as opposed to not being able to attending a lecture (Berardi & Blundell, 2014).

The second level of delivering this model would be the practical application. Simulating role play situations where students are required to deliver goal setting interventions may better prepare students for placement/practice, in particular using service users (patients) to give a real-life situation. Ladyshevsky and Gotjamanos (1997), investigated specific teaching strategies to enhance communication skills amongst healthcare students. Students were assigned a role play exercise working with one another and the same exercise working with a real service user. The majority of students were in favour of the service user exercise as they felt less anxious when having to work with real patients on placement. In addition, students felt their level of performance was raised when working with a service user as opposed to peer assisted learning. More recent evidence by Smith, Prybylo, and Conner-Kerr (2012), who investigated a variety of teaching methods to enhance learning in physical therapy students. They used a variety of teaching methods including standard teaching, simulation of a fictitious patient using a manikin and using actual patients. The results showed that students preferred method was working with real patients as they perceived their clinical reasoning and problem solving skills were more detailed as opposed to working on medical manikins. Considering goal setting is an intervention directly used with patients, mimicking practice in the teaching environment may be a more effective way of enhancing deeper learning.

A recent multi-theoretical ACL model designed by Chan, Lee, Hagger, Mok, and Yung (2017), integrated the self-determination theory and the theory of planned behaviour to ascertain the motivational determinants, ACL injury prevention and manage behaviours. The theory which is empirically supported proposed that this multi- model minimises any gaps or weaknesses that by using a single model may display. This model claims to align

its purpose with current social and health psychology in order to help explain and determine behaviours within an ACL population of people. Despite its potential merits, the model purely focussed on an athletic population, which therefore may not be transferrable to other populations of patients who also experience ACL trauma (occupational, road traffic collisions, pedestrian related injuries). The model appeared to have a strong theoretical justification but the actual process, application of this model within a typical clinical setting was not clear. In addition, this model appeared very 'linear thinking' as these models can be based on assumptions thus when working with a diverse range of patients, this should be an expected outcome. Due to this model lacking clarity regarding its clinical process, this may be challenging for less experienced clinical staff to implement. Furthermore, using pure theories in absence of opportunities for clinicians to use their clinical reasoning may suggest that those important skills of a physiotherapist are not being optimised.

Using a self-determination theory has also been used as a stand-alone approach within ACL rehabilitation. Carson and Polman (2017) explored using a self-determination theory approach in professional rugby union players following ACL surgery. Five players were involved in the study and they participated in interviews during their early, mid and late stages of rehabilitation. Concerns surrounding the rigidity of a typical ACL post operative protocol versus giving patients control over their rehab (autonomy) and feeling unmotivated when not feeling listened to (relatedness) were identified during the late stages of rehabilitation. It can be drawn from these findings that targeting the three basic psychological needs; autonomy, relatedness and competence does influence patients potential adherence and outcomes, but this stand-alone approach may not consider the actual communication style that is used when using a self-determination theory approach.

Hunter, Schofield, and Callander (2014) conducted a two-arm randomised controlled trial with quantitative and qualitative economic evaluations focussed on the clinical application of a contemporary model. This model was for patients with osteoarthritis of the knee and it consisted of a typically multidisciplinary team (known as the PARNTER study) but who were all trained in behaviour change and relative psychological theories. Their approach consisted of a bio-psychosocial model whereby all patients received contact time with the relevant professional, patient voice and a sense of continuity. The results revealed that patients adherence and reported outcomes were greater compared to standard healthcare pathways. Considering this study was pertinent to patients with osteoarthritis, good practices can be drawn from these approaches regarding patient centred care and giving patients a voice from the outset. Having considered recent studies that were published of the time of this PhD thesis, it is promising that there is still no ACL model that considers theory, healthcare and sport patients and a detailed clinical application.

6.8 Research implications

The next research step is to empirically validate the practical application of the model and how each phase manifests. Do the variables in each phase have equal weighting? What is the impact of missing a variable within a phase? To answer these potential research questions, using a variety of focus groups using physiotherapists and patients may provide useful technical and logical suggestions that may strengthen the existence and longevity of this model.

6.9 Conclusion

In conclusion, the thesis presents a preliminary model of goal setting for physiotherapists working within ACL rehabilitation by underpinning it with the much needed theory and mapping it to the CSP corporate strategy. A combination of all three evidence based phases is hoped to maximise patients' potential in terms of goal attainment and future self-management. Although the model in its current format is conceptualised as a substantive theory that integrates a number of theoretical frameworks, this model has been proposed to develop goal setting as psychological strategy that can effectively be implemented in practice and would also be meeting professional requirements from the CSP and HCPC.

Chapter 7

Conclusion

7.0 - Conclusion

The chapter summarises the findings of the thesis and outlines specific future recommendations. The thesis set out to explore physiotherapy goal setting practices, training and beliefs in anterior cruciate ligament rehabilitation. The research addressed the following objectives:

1. To investigate on a UK-based level physiotherapists' views and opinions on aspects of the psychological content of ACL rehabilitation.
2. To investigate on a UK-based level physiotherapists' perceptions and opinions of goal setting practices within ACL rehabilitation.
3. To explore on a UK-based level physiotherapists' training and experiences in practicing goal setting within ACL rehabilitation.
4. To investigate on a UK-based level physiotherapists' training needs in goal setting and their preferred method of education.

7.4 Strengths of the thesis

The credibility of the study was enhanced by using a pragmatist approach. Using a pragmatist approach is seen as a perfect philosophical partner in relation to a thesis that incorporates mixed methods as it gains a deeper understanding, while offsetting any weaknesses which are inherent within a single theoretical approach (David, 2014). The rigour of the interview study was strengthened by a full accurate transcription, prolonged immersion of the data set, member checking, peer debriefing and triangulation. The conformity of the thesis was enhanced through awareness of the researchers influence on the interpretation of the data and writing a reflexive account using autoethnography. Thus the reader can follow the logic applied to the mixed methods approach and that the conclusions reached were direct result of the data and evidence obtained. **By conducting a survey allowed the researcher to identify aspects of the survey results that did not provide detailed answers. This may be seen as a strength as these findings contributed to the design and planning of the interview study, thus providing a richer and deeper understanding of the broader concern within ACL rehabilitation. The researcher's clinical experience may be seen as a strength as it contributed to the originality of the thesis. The researcher (JA) has over 15 years of not only hospital related clinical experiences, but also multi-sport experiences and multi-environmental experiences (Sport, NHS, private hospital, talent ID and private practice). The end product (theoretical model) of the thesis is a potential strength by providing physiotherapists with the much needed clinical tool to enable them to improve their ability to set goals for future patients following ACL surgery. In addition, this tool may help with standardising aspects of practice so that future goal setting literature within physiotherapy may through time reveal consistency in approaches as opposed to current literature indicating that goal setting is poorly understood and insufficiently used.**

7.3 Limitations of the thesis

It is becoming increasingly popular and a requirement of some UK institutions that PhD students should begin their research with a systematic review Bloomberg and Volpe (2018). This is so PhD students who are on a trajectory of research can demonstrate a variety of research mastery using different research designs (Bloomberg & Volpe, 2018). The literature review included in this thesis provided great breadth and depth which certainly informed subsequent chapters. In addition, the literature review examined the historical evolution of physiotherapy as a profession, therefore using a systematic review design may have missed important historical, political and ethical considerations that would not have been included if a systematic review was conducted. The limitations are outlined in relation to the criteria of trustworthiness, transferability, credibility, dependability and conformability (Guba & Lincoln, 1994). During the survey study (chapter 4) the aim was physiotherapists' perceptions and opinions of goal setting practices used within ACL rehabilitation. Out of 135 potential participants, 124 completed the survey, giving it a high response rate. However, one hundred and twenty four participants is not a true representative of the number of chartered physiotherapists currently working within ACL rehabilitation. From an international perspective, the sample is only drawn from one nation and, therefore, the practice and training may not be inferable to other nations. In addition the survey study only included one physiotherapist that worked for the military. A large proportion a physiotherapists provide military servicemen with ACL rehabilitation (Rai, Varma, & Wani, 2018), therefore having included more MOD physiotherapists may have provided other insightful information in relation to goal setting. The interview study (chapter 5) interviewed a group of twenty four participants (N=24), within which there were eight NHS physiotherapists, eight sport physiotherapists and eight academic physiotherapists. Although this is a healthy number

of participants according to (Braun & Clarke, 2006b), again this study was limited to a UK-based study. Conducting international-based interviews may have revealed any similar or new practices in goal setting, which subsequently may have influenced the design of the proposed goal setting model. The central aim of the thesis focussed on physiotherapist's perceptions, experiences and training in goal setting for patients following ACL surgery. It could therefore be argued that not using a triangulated approach (incorporating patient's views and experiences) may have reduced the clinical impact of the model. Due to a large body of patients related studies already existing within this field, contributions to knowledge would have therefore been minimal. It is hoped from providing physiotherapists with an appropriate platform of education, clinical application of the proposed goal setting model, future research incorporating patient's views and experiences may be more clinically relevant to help effectively work towards a solution regarding bridging the gap of psychosocial support for patients following ACL rehabilitation. Not having an intervention chapter by using the model in practice may be seen as a limitation. The reason for not having an intervention chapter is that actually validating the models existence is a multi-pronged and large scale research plan and would be more suited as a post-doctoral 5 year research strategy. This plan would consist of investigating its efficacy on clinicians, patients and physiotherapy students and would be over a number of years.

7.1 Recommendations for physiotherapists

While the research conducted within this thesis makes a significant theoretical contribution by providing physiotherapists with a useful clinical goal setting model, it is clear from the findings and the literature that physiotherapists' level of understanding of psychology is not adequate enough to effectively provide patients with the much needed

psychological support. Considering physiotherapy as a profession has dramatically made a paradigm philosophical shift from a medical model to a bio-psychosocial model, paradoxically, this is not reflected in the current curricula (C Heaney, Alison, et al., 2012). Understanding the psychological symptoms that occur when sustaining an ACL injury and the importance of supporting the patient (emotionally, motivationally and educationally) may minimise any negative emotions patients experience during their rehabilitation process. Further knowledge on advanced communication skills to help engage, empower and motivate patients is also an important future training need. Having a deeper understanding on the psychological models (including, but not limited to, self-determination theory, social cognitive theory and trans-theoretical model) would facilitate a more thorough understanding when using goal setting in practice.

7.2 Recommendations for Future Research

The proposed model is only a guide, therefore to validate the proposed models existence and potential longevity as a clinical tool in ACL rehabilitation, an intervention study implementing the model would be beneficial. This could be a randomised control design comparing the proposed goal setting model against traditional physiotherapy goal setting interventions. A range of patient reported outcome measurements to assess the effectiveness of the goal setting model against traditional goal setting interventions could be physical parameters (strength, functional tests) and questionnaires such as patient satisfaction scales and self-efficacy questionnaires. **Researching patients' views and opinions of the proposed goal setting model compared to traditional physiotherapy goal setting methods (SMART) using possible focus group design may provide meaningful feedback, and may help identify where possible modifications may need to be made to the proposed model. Using a triangulated approach whereby both physiotherapists and patient's views are examined regarding expectations, return to sport/function and psychosocial support using the proposed model would validate the model clinically, but also (if positively received by patients) strengthening patient centeredness.**

From a physiotherapy programme perspective, embedding the model before students go out on placements, followed by conducting student-based focus groups on how useful they perceived using the clinical tool on placement, may provide valuable feedback as to whether students are able to use the model appropriately in practice.

Researching the usefulness of the model in other disciplines of physiotherapy would be a long term research plan. Areas where psychology interventions used by physiotherapists are continuing to rise such as chronic pain, cardiac rehabilitation and working with the

bariatric population of patient may be of great benefit in the promotion of empowerment and self- management.

7.3 Overall Conclusion of Thesis

Chapter 2 (an autoethnography) facilitated an initial line of enquiry by reflecting upon personal and professional experiences and retrieving insightful aspects of goal setting practices that benefitted from being explored using more scientific methods of enquiry. Objectives one and two have been met by combining a comprehensive literature review (chapter 3) followed by an online survey study (chapter 4) which explored views and opinions of UK chartered physiotherapists of goal setting practices used within ACL. Physiotherapists' views and opinions regarding aspects of the psychological content of ACL rehabilitation were congruent with existing literature highlighted from chapter 3. The most common psychological symptoms perceived to be present in patients who have undergone ACL surgery from the survey study (chapter 4) were fear of re-injury, anxiety and low mood. Similar findings were also reported from a number of peer reviewed studies (Ardern et al., 2011; Chmielewski et al., 2008; Christino et al., 2016). From a recognition of psychological symptoms perspective, seventy seven (N=77) out of one hundred and twenty four (N=124) physiotherapists acknowledge that it is very important to address the psychological well-being of the patient, but only twenty one (N=21) physiotherapists perceived their patients to present with any psychological symptoms following ACL surgery. The findings from both chapter 3 and 4 state that psychological symptoms are very prevalent in patients following ACL surgery, suggesting that physiotherapists working in ACL rehabilitation would benefit from further training regarding recognising psychological symptoms in patients following ACL surgery.

The views and opinions of physiotherapy goal setting practices were explored in chapter 3 (literature review), chapter 4 (survey study) and chapter 6 (interview study). **There was a degree of overlap from the two empirical studies (survey study and interview study).**

These findings that were present in both studies that the main goal setting approach was SMART goals. Long and short term goals were used by some physiotherapists. Out of the combined number of participants from both studies (N=148), only one physiotherapist working in the field of sport used an approach called 'learning needs analysis' to set goals. In terms of an effectiveness of using goals, study 4 revealed that the main issues associated with goal setting were unrealistic goals, poor adherence and patients being too over-active. In addition, both empirical studies revealed that physiotherapists' opinions and views surrounding SMART goals were not underpinned by any theory and none of the physiotherapists from the studies (apart from the one already mentioned) were able to suggest an alternative goal setting approach. The literature within the field of physiotherapy and healthcare appears to advocate the use of SMART goals, which is predominantly due to their simplistic format and ease of implementation within a clinical setting (Bovend'Eerd et al., 2009). The findings from both empirical studies, revealed that the current physiotherapy goal setting approach in an ACL rehabilitation is not effective due to the reported issues such as patient setting unrealistic goals and patient's level of motivation. A combined lack of underpinning theory and alternative approaches to goal setting may be one explanation for its lack of effectiveness.

Chapter 5 (interview study) explored goal setting experiences and practices in greater detail than chapter 4 (survey study). There were some similarities with both empirical studies demonstrating that physiotherapist strongly agreed that goals should always be patient-centred, but descriptions of how goals were implemented were largely physiotherapist-mandated with little regard for patients' views/opinions. This would suggest the communication skills employed when managing patients following ACL surgery would benefit from incorporating a collaborative approach to setting goals, active listening skills and using a more patient-centred approach. The physiotherapists' goal

setting approaches lacked any process and important aspects of the goal setting process were being underutilised. For example, patients' expectations were not being addressed and educating the patient on important aspects of the ACL rehabilitation process (late stages of rehabilitation) was overlooked. A general lack of patient engagement combined with an apparent lack of knowledge and processes regarding goal setting may be an explanation of these findings.

The findings from both empirical studies and of chapter 3 (literature review) demonstrate that training physiotherapists receive on goal setting may not be current compared to empirical evidence (Day et al., 2012; Locke & Latham, 2013). Both studies revealed that the training physiotherapists received on goal setting was minimal. In support of this, the findings from chapter 3 report that general psychology education is somewhat lacking in UK physiotherapy programmes (Heaney, Alison, et al., 2012). The interview study explored the training of goal setting in more detail and indicated that goal setting may have not been seen as a priority compared to other 'core physiotherapy topics such as anatomy or physiology' as most physiotherapists could not remember what their goal training consisted of, or even whether they recall having received any training. Furthermore, the interview study revealed that physiotherapists associated 'time served' to being more 'confident and competent' at setting goals. Despite this, the majority of physiotherapists were open and willing to accept further training in the field of goal setting.

A number of specific goal setting training needs were highlighted from the interview study. The training needs identified were: goal setting theory, alternative goal setting strategies and a process of how to set goals effectively. In addition, the study identified a

number of preferred methods of delivery of training in goals. These were interactive online sessions and workshop/practical based sessions.

Based on the findings from all chapters, the research findings in this thesis were conceptualised into a theoretical goal setting model, which is outlined in chapter 7 (proposed goal setting model). The conceptualised goal setting model (chapter 7) makes a significant contribution to the existing physiotherapy goal setting literature, as meets political drivers such as the CSP corporate 2020 strategy. The model optimises a greater therapeutic alliance. For instance, the pre-goal setting phase helps address issues associated with patient management: expectations, education, patient centeredness and patient engagement. The model provides physiotherapists with a much needed process to ensure all stages of the goal setting process such as: collaborative action planning, appropriate goal strategy and goal intention. The significance of goal evaluation phase enables both the physiotherapist and patient to evaluate their collaborative rehabilitation journey by providing feedback, adjusting the goal (if appropriate) and promoting self-management. The thesis provides a strong theoretical justification to support the existence of the proposed model, including alternative goal setting strategies (proximal/distal goals, outcome, performance and process goals). In addition, it also provides physiotherapists with a foundation of theory and directed reading, which they can build upon.

The thesis has provided comprehensive and compelling evidence in physiotherapist's goal setting practices within ACL rehabilitation, but also physiotherapist's consultation practices. These findings have helped create an innovative conceptual goal setting model which is necessary in enhancing how current goal setting practices are being implemented, promoting a patient-centred approach and meeting professional requirements.

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Glossary

Adherence	Attachment or commitment to a person, cause, or belief
Agenda for Change	The national pay system for all NHS staff, with the exception of doctors, dentists and most senior managers. NHS Terms and Conditions of Service.
Anterior Cruciate Ligament (ACL)	A ligament in the knee that that originates from the medial and anterior aspect of the tibial plateau and runs superiorly, laterally, and posteriorly toward its insertion on the lateral femoral condyle.
Assessment	A systematic process of information acquisition which guides the subsequent management of the patient's problem. It is broadly divided into a subjective component; an interview, and an objective component; a physical examination.
Auto-ethnography	Is a style of writing that links the personal cultural "placing the self" within a social context
Autonomous	Having the freedom to act independently.
Benjamini-Hochberg q	The false discovery rate (FDR) is a method of conceptualising the rate of type I errors in null hypothesis testing when conducting multiple comparison. The Benjamini-Hochberg q is a statistical procedure to help control the FDR.
Bio-medical	The application of the principles of the natural sciences, especially biology and physiology, to clinical medicine.
Bio-psychosocial Model	Is a broad view that attributes disease outcome to the intricate, variable interaction of biological factors (genetic, biochemical, etc), psychological factors (mood, personality, behaviour, etc.), and social factors (cultural, familial, socioeconomic, medical, etc.)
Chi-Square	A statistical method assessing the goodness of fit between a set of observed values and those expected theoretically.
Compliance	Describes the degree to which a patient correctly follows medical advice.
Conceptualise	To form an idea or principle in one's mind.
Confirmability	The degree to which the results could be confirmed or corroborated by others
Credibility	The confident of the researcher regarding the quality and truth of the research
Bonferroni correction	One of several methods used to counteract the problem of multiple comparisons.
Dependability	An external who examines the research
Empowerment	To increase the degree of autonomy and self-determination in people and in communities in order to enable them to represent their interests in a responsible and self-determined way, acting on their own authority.
Evidence Based Practice	The use of current best evidence in making decisions about the care of individual patients.
Evocative	Bringing strong images, memories, or feelings to mind.

Extended Scope Practitioner (ESP)	Extended practice roles within physiotherapy practice encompass tasks that may previously have been undertaken by the medical profession such as requesting investigations and listing for surgery.
Holistic	Characterised by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease.
Knowledge Skills Framework	An objective framework for evaluating job roles according to a scoring system, enabling jobs to be placed in an appropriate pay band.
Goal Attainment Scaling (GAS)	A method of scoring the extent to which patients' individual goals are achieved in the course of intervention.
Goal Setting	Something a person wishes to achieve.
Likert Scale	A five (or seven) point scale which is used to allow the individual to express how much they agree or disagree with a particular statement.
Mindfulness	The psychological process of bringing one's attention to experiences occurring in the present moment, which can be developed through the practice of meditation and other training.
Motivation	Is the reason behind people's actions, desires, needs or what causes a person to want to repeat a behaviour.
Musculoskeletal Physiotherapy	A discipline of physiotherapy concerning the human musculoskeletal system, including joints, ligaments, muscles, nerves, tendons that support the limbs and spine.
Narrative Review	A descriptive account of a subset of studies/ events in an area chosen area based on author selection.
Non-Parametric Test	A statistical method wherein the data is not required to fit a normal distribution.
National Service Framework (NSF)	A policy set by the National Health Service (NHS) in the United Kingdom to define standards of care for major medical issues.
Patient Centred Care	Patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals.
Phi and Cramer V	Phi and Cramer's V are a statistical method based on adjusting chi-square significance to factor out sample size.
Physiotherapist	Is a science-based professional that takes a 'whole person' approach to health and wellbeing, which includes the patient's general lifestyle
Positive Self-Talk	The act of practice to talking to oneself, either aloud or silently to overwrite the negative thoughts with positive truths.
Pragmatism	Pragmatism is a deconstructive paradigm that advocates the use of mixed methods in research
Randomised Control Trial (RCT)	A type of scientific experiment in which eligible subjects are randomly allocated to receive one or other of the alternative treatments under study.
Reflection	To think about something yourself
Reflexivity	The researchers voice in qualitative research

Self-Determination Theory (SDT)	A theory that encompasses a broad framework of theories concerning the study of human motivation and personality.
Self-efficacy	One's belief in one's ability to succeed in specific situations or accomplish a task
Self-regulation	The ability to monitor and control our own behaviour, emotions, or thoughts, altering them in accordance with the demands of the situation.
SMART	Specific, Measurable, Achievable, Realistic and Timely
Social Cognitive Theory (SCT)	An individual's knowledge acquisition that can be directly related to observing others within the context of social interactions, experiences, and outside media influences.
Survey Instrument	A tool for consistently implementing a scientific protocol for obtaining data from respondents.
Tampa Scale of Kinesiophobia (TSK)	The Tampa Scale for Kinesiophobia (TSK) is a 17 item questionnaire used to assess the subjective rating of kinesiophobia or fear of movement
The Knee Injury and Osteoarthritis Outcome Score (KOOS)	An instrument to assess the patient's opinion about their knee and associated problem
Thematic Analysis	A process of coding the data into established, meaningful themes and categories.
Transferability	The degree to which the research can be generalised or transferred to other contexts.
Trans-theoretical Model	Is an integrative theory of therapy that assesses an individual's readiness to act on a new healthier behaviour, and provides strategies, or processes of change to guide the individual.
Triangulation	The use of more than one method of data collection to answer a research question
Trustworthiness	Relates to the quality of the study. It is based on four components: credibility, dependability, confirmability and transferability.
Variable	A characteristic, number, or quantity that increases or decreases over time, or takes different values in different situations.
Volition	Volition or will is the cognitive process by which an individual decides on and commits to a particular course of action and is defined as purposive striving.

Appendices

Chapter 4 Physiotherapists' perceptions of goal setting strategies used in ACL rehabilitation

Documentation

Appendix A

Ethics Independent Reviewer's Report

This form should be completed by a member of the Department of Sport, Health and Exercise Science Ethics Committee who has been assigned to review a particular ethics application by the chair of the committee. The front section of the Independent's Reviewer's Report should be printed, signed and dated, and attached to the back of the reviewed ethics application. The reviewed ethics application should be given to the Ethics Committee chair once all reviews have been completed. The checklist provided at this end of this form is to help the reviewer complete the review and guide the content of his or her written report, which should be typed into the relevant boxes that are given before the checklist. Any checkbox highlighted red that has been checked requires attention.

Please note that the checklist is for guidance only and reviewers should be aware of other ethical considerations relevant to the ethics application being reviewed.

An electronic copy of the completed report should be stored on the reviewer's computer.

Independent reviewer's name	John Toner
Application number	Physiotherapists perceptions of goal setting strategies used in ACL rehabilitation
Principal investigator's name	Caroline Douglas/Rebecca Vince/Adam Nicholls
Student investigator's name (if applicable)	Jenny Alexanders

Reviewer's recommended outcome		
Approve <input checked="" type="checkbox"/>	Refer <input type="checkbox"/>	Revise <input type="checkbox"/> Reject <input type="checkbox"/>

Reviewers comments	
Section	Comment

.....John Toner.....

.....12-08-15.....

John Toner

Name of independent reviewer

Date

Signature

V1 Risk Assessment Form EC3

This form is periodically updated so please download the latest version from ebridge before completing

	<p>Control measure: Participants will be fully informed regarding the online survey and participants who complete the survey will be deemed to have consented to the online survey.</p>	
The participant may become frustrated at the length of the survey	<p>Explain Hazard: Participants may become frustrated with the time taken to complete the online survey.</p> <p>Control measure: The participant will be fully aware regarding the duration of the survey, that the survey will take 10-15 minutes to complete.</p>	1x2
Limitations on feedback	<p>Explain Hazard: Participants may take offense in relation to no immediate feedback following the survey.</p> <p>Control measure: Participants will be informed that the nature of the study would not allow immediate feedback</p>	1x1
Data handling	<p>Explain Hazard: Inappropriate handling of data collected from the study.</p> <p>Control measure: All data will be kept on the student investigator's password protected computer. Data will only be shared with the research team. No other external parties will have access to this information. All data will be deleted after 5 years post completion of study.</p>	1x1
Coercion	<p>Explain Hazard: Participants may feel worried/ pressured or obligated to participate in the online survey.</p> <p>Control measure: Participants will be approached via email which will contain a link to the online survey. The text from the participant information sheet will be used as the opening web page of the survey so that participants are able to confirm that they have read, understood and consented to taking part in the online survey. It is the participant's choice whether to participate in the research project or not. During the consent process, participants will be advised that they can withdraw from the study at any point without providing any reason for doing so or any adverse implications.</p>	1x2

V1 Risk Assessment Form EC3

This form is periodically updated so please download the latest version from ebridge before completing

Confidentiality and Anonymity of the participant	<p>Explain Hazard: Participants may become concerned about any information that they provide being revealed therefore them being identified.</p> <p>Control measure: Research will conform with legislation relating to the Data Protection Act (1988). Identifiable information will not be published or made available to anybody not involved in the research. Access to the research data is limited to the research team. All reasonable steps will be taken to ensure that confidential details are secure – data will be coded and kept on a password protected computer.</p>	1x3
Click here to enter text.	<p>Explain Hazard: Click here to enter text.</p> <p>Control measure: Click here to enter text.</p>	Click here to enter text.
Click here to enter text.	<p>Explain Hazard: Click here to enter text.</p> <p>Control measure: Click here to enter text.</p>	Click here to enter text.
Click here to enter text.	<p>Explain Hazard: Click here to enter text.</p> <p>Control measure: Click here to enter text.</p>	Click here to enter text.
Click here to enter text.	<p>Explain Hazard: Click here to enter text.</p> <p>Control measure: Click here to enter text.</p>	Click here to enter text.

10. Are controls adequate? ⓘ	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
11. Additional controls or remedial action required ⓘ	Click here to enter text.
12. General control measures ⓘ	<p>Undergraduate students testing in the department’s laboratories will be supervised by a staff member at all times. A first aider will be present at all times. In case of emergency contact Extension 5555.</p> <p>General Control Measures</p> <p>1. Pre-exercise medical questionnaire. Testing may only be permitted following satisfactory completion of the pre-exercise medical questionnaire whereby no contraindications to exercise or any aspect of the full testing procedure have been highlighted.</p>

V1 Risk Assessment Form EC3

This form is periodically updated so please download the latest version from ebridge before completing

	<ol style="list-style-type: none"> 2. Informed consent form. Testing may only be permitted following the subject's informed consent concerning all aspects of the testing procedure. 3. Strict adherence to test protocol. 4. Close monitoring of subject by a test administrator. 5. Feedback and communication is maintained between the subject and the experimenter throughout the test. 6. Termination of test if discomfort to subject is deemed excessive. 		
13. Emergency procedures	<ol style="list-style-type: none"> 1. Emergency first aid available on site within the department. All test administrators will have full knowledge of what action to take in an emergency, as outlined in the departmental Health and Safety Policy. 2. Cleaning agents and equipment will be readily available to clean up any sweat, saliva, blood or vomit. 3. In case of emergency contact Extension 5555. 4. If any severe feeling of discomfort is signalled by the subject or seen by the administrator, then testing will be terminated and further action taken if required. 		
14. Monitoring procedures	<ol style="list-style-type: none"> 1. All equipment checked regularly prior to use for correct and safe functioning. 2. Continued monitoring of procedures and equipment in case modifications can further reduce risk. 3. Continuous monitoring of the participant during and immediately after the test procedure will occur. 		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Date to be completed</td> <td style="width: 50%;">On-going</td> </tr> </table>	Date to be completed	On-going
Date to be completed	On-going		

15. Declaration of the principal investigator and independent reviewer

I am the principle investigator and have read this risk assessment and consider that the level of risk has been appropriately assigned, that the associated hazards are acceptable and that all appropriate control measures have been put in place before, during, and after the testing procedure in order to minimise each specific risk associated with the testing procedure.

.....

Name of principal investigator	Date	Signature
---------------------------------------	-------------	------------------

I am an independent reviewer who sits on the Department of Sport, Health and Exercise Ethics Committee. I have independently reviewed this risk assessment and consider that the level of risk has been appropriately assigned, that the associated hazards are acceptable and that all appropriate control measures have been put in place before, during, and after the testing procedure in order to minimise each specific risk associated with the testing procedure.

.....

Participant Letter of Invitation

Project title	Physiotherapists perceptions of goal setting strategies used in ACL rehabilitation
Principal investigator	Name: Dr Caroline Douglas Email address: c.douglas@hull.ac.uk Contact telephone number: 01482463345
Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@hull.ac.uk Contact telephone number: 01482463621

Dear Sir or Madam

This is a letter of invitation to enquire if you would like to take part in a postgraduate research project regarding physiotherapists' perception of goal setting strategies used in ACL rehabilitation. This will be in the form of an online survey which would take approximately 10-15 minutes to complete.

Before you decide if you would like to take part, it is important for you to understand why the project is being done and what it will involve. Please take time to carefully read the Participant Information Sheet on the following pages and discuss it with others if you wish. If there is anything that you are unsure about, please do not hesitate to email me and I will provide you with further information

If you would like to take part please complete and return the Informed Consent Declaration form.

Please do not hesitate to contact me if you have any questions.

Yours faithfully,

Jenny Alexanders

Participant Information Sheet

Project title	Physiotherapists perceptions of goal setting strategies used in ACL rehabilitation
Principal investigator	Name: Dr Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482463345
Student investigator	Name: Jenny Alexanders Email address: J.Alexanders@hull.ac.uk Contact telephone number: 01482463621

What is the purpose of this project?
To investigate musculoskeletal physiotherapist's perceptions of the usage of goal setting strategies in anterior cruciate ligament reconstruction (ACL) rehabilitation. As well as the long term physical implications in recovering from ACL injury, patients that undergo ACL may also experience psychological symptoms such as fear of re-injury, reduced confidence, anger and self efficacy issues (Schwab, Reese, Pittsinger and Yang, 2012), which may impact their adherence to any rehabilitation programme. The purpose of this research is to therefore explore the experiences of physiotherapists and the use of goal setting strategies within ACL rehabilitation. This investigation seeks to uncover valuable information about the training needs of qualified physiotherapists and inform the development of future post operative ACL rehabilitation protocols.

Why have I been chosen?
You have been chosen because you are a chartered physiotherapist who is currently working in the field of musculoskeletal outpatients and/or sport. We are interested in your clinical opinion, reasoning and beliefs as to the goal settings strategies you employ within your clinical practice, in particular with ACL patients. We are also interested in your clinical opinion regarding the outcomes of using goal setting strategies with your patients.

What happens if I volunteer to take part in this project?
First, it is up to you to decide whether or not to take part. If you decide to take part you will be given this Participant Information Sheet to keep and asked to complete the Informed Consent Declaration at the back. You will also be asked to confirm your consent at the start of the online questionnaire. You will also have the opportunity to ask any questions you may have about the project. If you decide to take part you are still free to withdraw at any time and without needing to give a reason.

What will I have to do?

You will be required to complete an online survey that will last approximately 10-15 minutes. There will also be an option to leave a contact email address which will be used to contact you at a later date to see if you would be interested in participating in a future study in this area. Your information will be stored confidentially and not passed on to any other party.

Will I receive any financial reward or travel expenses for taking part?

No

Are there any other benefits of taking part?

You will be contributing to an online survey that will help to identify any undergraduate and postgraduate training needs of the underpinning theoretical knowledge and practical application of using goal setting strategies within musculoskeletal physiotherapy.

Will participation involve any physical discomfort or harm?

No

Will I have to provide any bodily samples (e.g. blood or saliva)?

No

Will participation involve any embarrassment or other psychological stress?

Yes

Although the questions included in the survey have been screened and deemed by the researchers to be harmless and non-offensive, it is acknowledged that some participants may be perceive some of the questions to be somewhat sensitive.

What will happen once I have completed all that is asked of me?

Once you have completed the online survey no further information is required. If on the online survey you have indicated your interest in participating in a future study to further explore your experiences and have provided contact details, you may be contacted (before February 2016) to see if you would like to participate in future interview-based research project.

How will my taking part in this project be kept confidential?

The questionnaire will not ask for any personal details. However, at the end of the study you have an option to leave a contact email address. Each online questionnaire will be given a unique identifier and data coded and stored in accordance with the Data Protection Act (1988) on a password protected computer.

How will my data be used?

The data will feature as part of a PhD Thesis

Who has reviewed this study?

This project has undergone full ethical scrutiny and all procedures have been risk assessed and approved by the Department of Sport, Health and Exercise Science Ethics Committee at the University of Hull.

What if I am unhappy during my participation in the project?

You are free to withdraw from the project at any time. During the study itself, if you decide that you do not wish to take any further part then please inform the person named in Section 18 and they will facilitate your withdrawal. You do not have to give a reason for your withdrawal. Any personal information or data that you have provided (both paper and electronic) will be destroyed or deleted as soon as possible after your withdrawal. After you have completed the research you can still withdraw your personal information and data by contacting the person named in Section 18. If you are concerned that regulations are being infringed, or that your interests are otherwise being ignored, neglected or denied, you should inform Dr Andrew Garrett, Chair of the Department of Sport, Health and Exercise Research Ethics Committee, who will investigate your complaint (Tel: 01482 463866; Email: a.garrett@hull.ac.uk)

How do I take part?

Contact the investigator using the contact details given below. Jenny will answer any queries and explain how you can get involved.

Name: Jenny Alexanders Email address: J.Alexanders@hull.ac.uk Tel number: 01482463621

Informed Consent Declaration

Project title	Physiotherapists perceptions of goal setting strategies used in ACL rehabilitation
Principal investigator	Name: Dr Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482463345
Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@hull.ac.uk Contact telephone number: 01482463621

Please Initial I confirm that I have read and understood all the information provided in the Informed Consent Form (EC2) relating to the above project and I have had the opportunity to ask questions.

I understand this project is designed to further scientific knowledge and that all procedures have been risk assessed and approved by the Department of Sport, Health and Exercise Science Research Ethics Committee at the University of Hull

Any questions I have about my participation in this project have been answered to my satisfaction.

I fully understand my participation is voluntary and that I am free to withdraw from this project at any time and at any stage, without giving any reason.

.....
Name of participant	Date	Signature
.....
Person taking consent	Date	Signature

Click here to enter text.

Appendix B :Copy of the Survey exported from BOS



Physiotherapist's perceptions of goal setting strategies for patients following anterior cruciate ligament surgery

Showing 124 of 124 responses

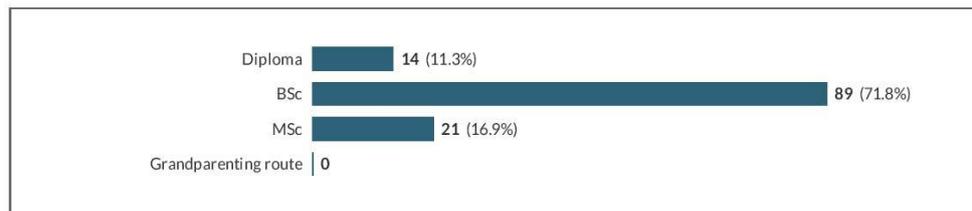
Showing **all** responses

Showing **all** questions

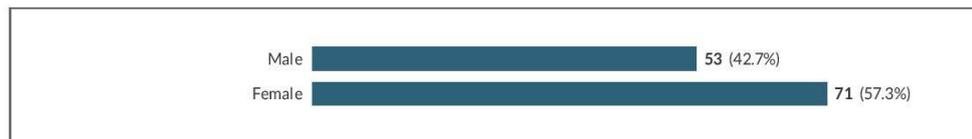
- 1 By clicking the yes button I therefore give my full informed consent to take part in the online survey. I fully understand my participation in this survey is voluntary and that I am free to withdraw from this survey at any point without having to give any reason.



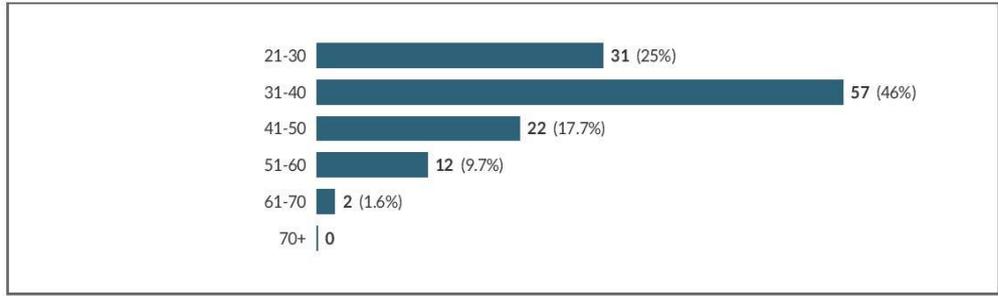
- 2 What qualification did you obtain to become a Health and Care Professionals Council (HCPC) Registered Physiotherapist?



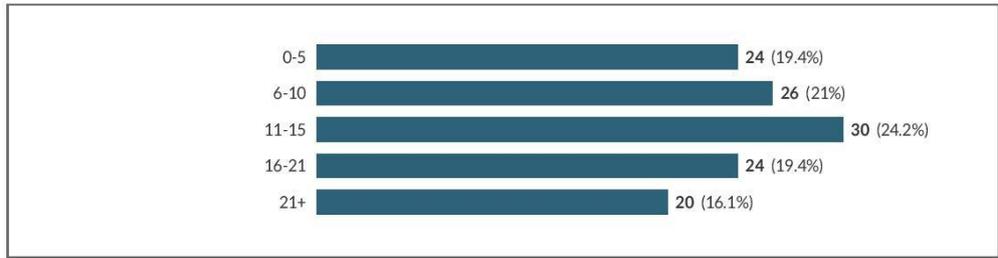
- 3 Gender



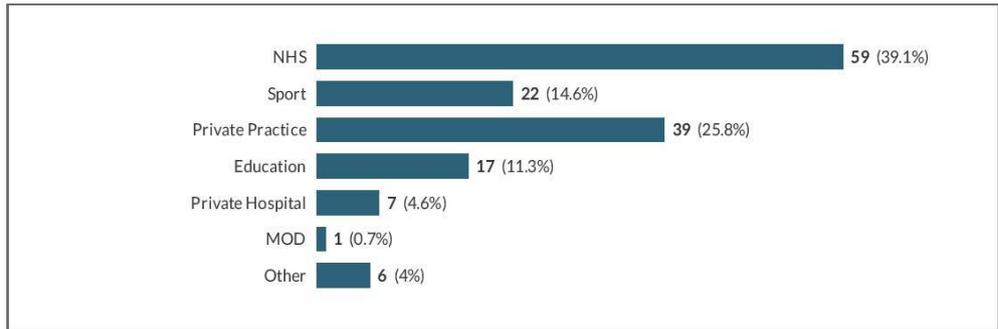
- 4 Age



5 Number of years qualified as a Chartered Physiotherapist?



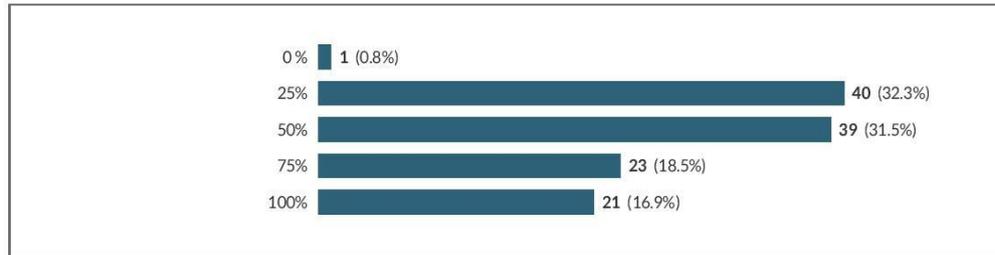
6 Main place of work



6.a If you selected Other, please specify:

Showing 5 of 6 responses	
Legal	152675-152669-9207510
States of Jersey - government funded like the NHS	152675-152669-9210898
Private provider of NHS services	152675-152669-9217047
Locuming in most of the above	152675-152669-9224063
Current in Australia public health - previously NHS	152675-152669-9250270

7 What proportion of patients do you feel have experienced psychological symptoms following ACL surgery? (select one answer)



8 What psychological symptoms have patients presented with following ACL surgery? (please provide as many as relevant)

Showing all 124 responses	
Fear of re-injury Anxiety	152675-152669-9153997
Anxiety	152675-152669-9154139
Lack of adherence Depression Anxiety Fear of re-injury Withdrawal Anger	152675-152669-9156128
Apprehension of re-injury Fear avoidance of rehab progressions	152675-152669-9176550
Depression	152675-152669-9179961
Fear avoidance Loss similar to bereavement from losing the ability to play a sport they have played for many years Difficulty adapting to time off work or restricted duties	152675-152669-9181365
mainly depression but also catastrophising symptoms	152675-152669-9181839

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<p>fear re-occurring injury work stress/anxiety to exercise.</p>	152675-152669-9182034
<p>Fear of re-injury. Fear in lack of strength compared to non-injured side. Depression due to lack of participation within the team training environment.</p>	152675-152669-9181779
<p>Anxiety Fear of graft failure Longterm weakness</p>	152675-152669-9182623
<p>Anxiety regarding loading reduced overall confidence negative body image relating to surgical scaring reduced motivation for sport dependence on clinicians for decision making regarding ability to load the knee</p>	152675-152669-9182719
<p>Depression, Fear of re-injury, Stress,</p>	152675-152669-9182801
<p>Depression Catastrophising Fear avoidance Fear Anxiety</p>	152675-152669-9185179
<p>Anxiety about re-rupture / graft failure and subsequent return to sport / desired activities.</p>	152675-152669-9185296
<p>Anxiety, apprehension, depression.</p>	152675-152669-9185492
<p>Always been a level of anxiety re length of rehab and return to normal activity levels</p>	152675-152669-9186851
<p>Fear about returning to their sport Concerned it will happen again Depression - lack of physical activity during rehab period Issues associated with weight gain</p>	152675-152669-9187768
<p>Anxiety regarding potential instability or re-injury</p>	152675-152669-9187789
<p>mild depression at temporary and possible permanent loss of function. Anxiety. Stress. Obsessive tendencies</p>	152675-152669-9187735
<p>Fear of re-injury Anxiety</p>	152675-152669-9188421
<p>Anxiety Anger</p>	152675-152669-9188433
<p>Depression Anxiety</p>	152675-152669-9189532
<p>Fear avoidance</p>	152675-152669-9189540
<p>fear avoidance, anxiety, apprehension, uncertainty.</p>	152675-152669-9189797
<p>Fear of reinjury Fear of other injury Lack of belief in recon Fear of return to explosive activity Fear of return to sports</p>	152675-152669-9189856

loss of trust in knee	152675-152669-9190508
anxiety, fear avoidance	152675-152669-9191107
anxiety, fear, depression, avoidance behaviour	152675-152669-9191400
fear of return to sport the older the patient the more affected.	152675-152669-9191956
Fear avoidance	152675-152669-9192252
frustration with reduced functional ability lack of confidence in the effected limb	152675-152669-9192172
Fear of movement initially and later fear of return to work/sport.	152675-152669-9193230
Frustration, anxiety, depression.	152675-152669-9195526
Usually return to play concerns. Tackling anxiety Progress fears	152675-152669-9195843
Fear avoidance Depression Anxiety	152675-152669-9196453
Fear of re rupture Inability to return to sport	152675-152669-9196503
Demotivation during rehab, lack of confidence returning to pre-injury level of activity.	152675-152669-9197291
Apprehension Lack of confidence	152675-152669-9197881
fear, anxiety activity avoidance.	152675-152669-9197926
fear of recurrence, fear of getting back to full activities	152675-152669-9198041
Anxiety regarding return to sport. Reduced confidence regarding the stability of the knee.	152675-152669-9197971
Fear of reoccurrence, fear for the future, not being normal, missing out.	152675-152669-9198624
Fear Low mood Perceived worsening Feeling unable to play sport in the future	152675-152669-9198744
Lack of confidence, anxiety	152675-152669-9198897
I cannot recall any psychological issue recently	152675-152669-9198889
I'm not really sure what you mean by psychological symptoms, but i feel that most of them have apprehension in returning to the activity during which they sustained the injury	152675-152669-9199033
Usually fear of repeat injury/return to sport. Catastrophising over rehabilitative pain.	152675-152669-9199329
Anxiety	152675-152669-9200342
Fear of movement Centralised pain mechanism Depression	152675-152669-9200504

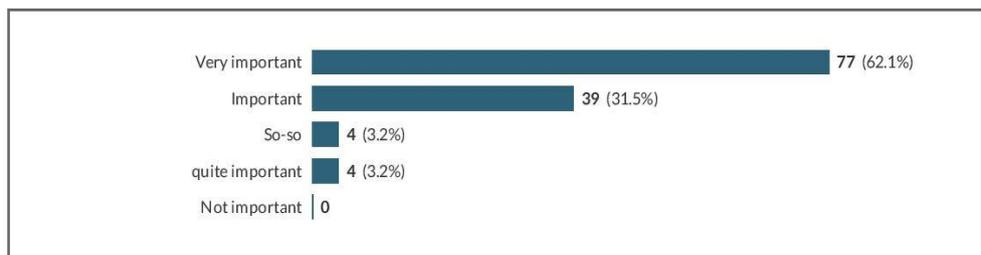
Depression Lack of confidence	
anxiety about future activities and impact on career.	152675-152669-9200526
Fear of re injury Anxiety	152675-152669-9201683
Realisation that it's long term rehab and slow	152675-152669-9204014
Low mood, decreased confidence in ability, decreased self worth, lack of focus	152675-152669-9204810
Stress mainly from long term injury and possibility of contract renewals etc.	152675-152669-9204908
Anxiety Grief Anger Resentment	152675-152669-9205010
Fear of return to activity Kinesiophobia	152675-152669-9205073
Fear of not returning to same level of sport	152675-152669-9205437
Anxiety re: re injury	152675-152669-9205545
Anxiety regarding returning to pre injury levels. When to return. Worried about re injury	152675-152669-9205933
Depression, anxiety, feeling of not being able to do what they want, frustration ,	152675-152669-9207263
Symptoms including poor sleep rumination lethargy emotionally labile reports of nightmares all sorts supporting Anxiety depression stress	152675-152669-9207510
Depression and lack of motivation to complete rehab Fear of return to play Chronic pain symptoms	152675-152669-9208121
Anxiety following operation. Low mood. Worried.	152675-152669-9208162
Fear of returning to work/sport. Fear of re-injury. Ongoing symptoms, pain disability lack of control of their own life.	152675-152669-9208334
Fear of re-injury Anxiety Depression	152675-152669-9209992
Reduced confidence Fear avoidance	152675-152669-9210189
Anxious re exercising Fearful to return to sport and work Poor sleep	152675-152669-9210898
Apprehension to running/change of direction	152675-152669-9211614
Catastrophising Anxiety re return to sport	152675-152669-9211586
confidence fear avoidance	152675-152669-9211847

Fear of reinjury Pain related anxiety Poor forward planning / goal setting Low mood Fear of not returning to pre injury levels of activity Lack of motivation Poor adherence with rehab Feelings of not being in control of rehab outcome (low internal locus of control)	152675-152669-9211992
Reluctance to return to sport where injury was obtained. ?more likely to injure themselves as not fully focused on the game. More likely to seek physio assessment for reassurance for other injuries.	152675-152669-9216395
Depression at not being able to participate in sport and related social activities. Anxiety re: post surgical rehab and pain. Anger at being unable to do the things they want to do. Worries regarding work / ability to continue or return to work	152675-152669-9216675
fear avoidance behaviour	152675-152669-9216880
Anxiety of re-injury Reluctance to push to pre-injury levels	152675-152669-9217047
Aprehension	152675-152669-9218464
Fear to return to activity Frustration at slow rehab	152675-152669-9219104
Fear of re-rupture, fear avoidance behaviours	152675-152669-9219279
anxiety fear avoidance behaviour	152675-152669-9219922
Tension, anxiety, boredom, depression, disengagement, isolation	152675-152669-9223723
anxiety/fear of reinjury worry about lack of fitness	152675-152669-9224013
depression / low mood	152675-152669-9224063
Fear of inability to return to normal function; fear of failure of the reconstruction.	152675-152669-9224304
Fear of re-injury / graft damage / graft failure	152675-152669-9224363
low in mood kinesiophobia	152675-152669-9225608
Fear of re-injury Anxiety Depression	152675-152669-9235191
Unable to accept any reduction in activity levels or loss of ROM of knee post surgery. Poor compliance within early post op weeks, over activity potentially over stretching the graft. Refusal to accept signs of early OA found intra-operatively At the other end of the scale, the worriers who lack confidence in the knee and don't resume sport post reconstruction.	152675-152669-9235325
Low self esteem Low Mood Withdrawal	152675-152669-9239050

Anxiety Depression	152675-152669-9244771
Fear Depression	152675-152669-9244791
anxiety Depression	152675-152669-9245656
Anxiety - it just is in varying degrees. Some are phobic towards certain movements/activities	152675-152669-9250270
off work, unable to play sport, unable to drive, in pain, change to role in house	152675-152669-9252925
Fear Anxiety Apprehension	152675-152669-9254033
This is not my area of work, however I have worked in the area of Fear of Falling and often that transpired following orthopaedic surgery of an injury. My experience tells me that the psychological symptoms may well be of avoidance of situations due to either the the original injury of fear of damaging the surgical repair.	152675-152669-9254032
Depression Anger	152675-152669-9254640
reinjury anxiety and fear of return to sport confidence issues depression	152675-152669-9257110
- Fear and anxiety relating to performance post rehabilitation ("I will never be the same").	152675-152669-9258030
Fear of re-injury. Depression	152675-152669-9260175
Fear avoidance	152675-152669-9260232
Anxiety	152675-152669-9262905
the fear of re-tearing. loss of place within the team (both socially & actual playing position)	152675-152669-9263104
Anxiety re return to sport	152675-152669-9263083
Wanting to do too much too soon.	152675-152669-9265073
Fear-of re rupture Maladaptive coping strategies	152675-152669-9266504
Anxiety Loss of confidence Fear avoidance	152675-152669-9269913
Fear, apprehension in returning to sports	152675-152669-9271469
Anxiety	152675-152669-9271911
Anxiety Apprehension Loss of confidence Self doubt Denial	152675-152669-9274941

Over-compensation	
fear, anxiety, a loss of confidence.	152675-152669-9279595
Yellow flags - avoidance weight bearing on the leg	152675-152669-9292642
anxious loss of confidence	152675-152669-9293856
fear / anxiety	152675-152669-9301779
loss of confidence anxiety	152675-152669-9309212
low mood as unable to compete in sport fully	152675-152669-9309270
anxiety, fear of reinjury, depression, fear of never returning to previous level of sports, hopelessness	152675-152669-9309634
loss of confidence, fear of re-injury, particularly at early stage and first impact work, potentially have impact on engagement in rehab	152675-152669-9309988
Depression Anxiety Fear	152675-152669-9310676
Fear of recurrence	152675-152669-9317593
Low morale, Lack of motivation, social exclusion	152675-152669-9317792
Anger, Catastrophisation, Denial, fear/avoidance, depression, anxiety,	152675-152669-9422485
Fear/avoidance	152675-152669-9455983
Lack of trust Lack of confidence Unrealistic expectations Low mood	152675-152669-9456588
Worry of the ACL integrity. Worry over residual post op pain	152675-152669-9457750

9 How important do you feel it is to address the psychological well being of patients who have undergone ACL surgery? (select one answer)



- 10 Being able to effectively set goals is a requirement outlined in the HCPC Standards of Proficiency, therefore, can you describe goal setting?

Showing all 124 responses	
Something a person wishes to accomplish	152675-152669-9153997
A task a person wants to achieve	152675-152669-9154139
Goal setting is a mental technique of motivating clients in part of their rehabilitation process which can also be used to increase a clients commitment to the process. It is setting achievable targets to reach the end goal.	152675-152669-9156128
Goals are agreed targets between a patient and a health care professional, setting down achievable aims and working towards them during the rehab process.	152675-152669-9176550
Goal setting involves setting a target which is measurable which will assist you when indicating outcome/improvement	152675-152669-9179961
Making a plan jointly with the patient about specific objectives or targets they wish to achieve as part of their rehabilitation with timescales for such goals to be achieved	152675-152669-9181365
setting goals jointly with patients that are specific and measurable in your clinical setting, and appropriate and achievable within patient lifestyle	152675-152669-9181839
goals are SMART which are patient specific in order to achieve a desired outcome	152675-152669-9182034
Goal setting is a strategy used to allow individuals to achieve specific milestones within their rehabilitation process.	152675-152669-9181779
Goal setting is selecting a goal with the patient as to what they are working towards within their treatment programme and what you are aiming for with regards to outcome of treatment/ surgery. Ideally theses should be SMART goals.	152675-152669-9182623
To create realistic targets based on the current medical limitations, motivation/mindset of the patient, co-morbidity and aims of the patient. In order to create clear methods of achieving this desired target. For these to both be short and long term and follow the basic SMART principles that govern good goal setting.	152675-152669-9182719
Goal setting is the process of identifying what exactly needs to be worked on, what needs to be achieved and how exactly you intend to get there using SMART goals.	152675-152669-9182801
SMART goals Goal setting identifies a specific activity or function or goal that a patient wishes to achieve and is often broken down into Specific Measurable Achievable Relevant to them and have a specific timeframe to be achieved.	152675-152669-9185179
Goal setting is an agreed set of targets to be achieved through treatment that are specific, measurable, achievable, realistic and time bound.	152675-152669-9185296
Separated into long and short term, set by a patient and their therapist, to ensure patient centred rehabilitation. Normally within a timely manner.	152675-152669-9185492
Goals are Factors determined initially in the first assessment but may be altered or added to as the treatment progresses. Goals are elements of the rehab process which the patient and Physio aim to achieve eg return to work/sport, restore full active range of movement, strength	152675-152669-9186851

etc. Goal setting is the process by which the Physio and patient plan and draw up in order to achieve the identified goals. The process of goal setting may have both subjective and objective elements to it.	
Understanding the short and long term requirements / needs of the patient and working out strategies to get them closer to their goals.	152675-152669-9187768
The goal should be smart: specific, measurable, achievable, results focused and time bound It should be set with the patient.	152675-152669-9187789
goal setting is where the ideal and realistic rehabilitation process is laid out for patient and therapist to see. Within this framework the end goals should be several/numerous task related goals/milestones which should denote progress, identify problems and gauge the attainment of a timely end result. Goals should both motivate rehab, be achievable and negate any unrealistic and potentially damaging behaviour.	152675-152669-9187735
A goal a patient specifically wants to achieve	152675-152669-9188421
A task a person strives to achieve	152675-152669-9188433
An attainable task that is set by the patient or physiotherapist after discussion	152675-152669-9189532
Goal setting involves the development of an action plan designed to motivate and guide a person towards a goal.	152675-152669-9189540
Goal setting is identifying and agreeing specific, measurable, achievable, realistic and timed targets for the patient which should be both short and long term desired outcomes of treatment.	152675-152669-9189797
SMART in approach, patient orientated, discussed in short, medium and long term time frames	152675-152669-9189856
safe stages of progression from surgery to normal activities / sport	152675-152669-9190508
specific, measurable, realistic, achievable and timed outcomes (Short and long term) set between clinician and patient	152675-152669-9191107
The process of setting achievable targets that provide the appropriate levels of demand within appropriate time frames enabling the individual to achieve their potential .	152675-152669-9191400
a task or objective that is Specific Measurable Achievable Realistic Timed	152675-152669-9191956
Setting a specific, individualised outcome of treatment, agreed with the patient, prior to embarking upon a therapeutic working relationship.	152675-152669-9192252
patient centred goal setting should address a personal, functional, reliable activity. It needs to be easily measured with a realistic timeframe set.	152675-152669-9192172
Goals should be SMART and they should be agreed with the patient. They may be short and long term.	152675-152669-9193230
The setting of aims which are specific, measurable, achievable, realistic and timed.	152675-152669-9195526
Identifying the aims and objectives of the player and setting out milestones to achieve them - making them realistic and achievable	152675-152669-9195843
Goal setting should be achievable, short and long term, functional, time scale outcome	152675-152669-9196459

Goal setting should be achievable, short and long term, functional, timescales outcome measured, realistic	152675-152669-9196453
The establishment and agreement of SMART goals in collaboration with client	152675-152669-9196503
Goal setting should, in my opinion, conform to SMART, to make sure goals are realistic and recordable.	152675-152669-9197291
Discussing and agreeing small achievable targets that are related to the patient	152675-152669-9197881
A goal is a measure of change or progress really. It should be set by the patient (hopefully) and conform to set parameters i.e. SMART	152675-152669-9197926
clear activity, achievement completed in specific time	152675-152669-9198041
Creating a mutually agreed series of specific, realistic short and long term goals / aims to be achieved in a set timescale. An objective outcome measure should be used to demonstrate the progress made.	152675-152669-9197971
To set out some objectives that are SMART and are agreed with the patient and therapist	152675-152669-9198624
Setting a realistic and achievable outcome which the patient is key	152675-152669-9198744
Discussing measurable activities or milestones the patient would like to achieve in a set time frame	152675-152669-9198897
finding out what the patient wishes to achieve following the surgery, agreeing what is realistic, setting a specific goal and a time scale then planning how that can be achieved	152675-152669-9198889
yes	152675-152669-9199033
Goal setting as I understand it should be SMART, specific, measurable, achievable, results focussed and timed	152675-152669-9199329
Setting targets for the patient to attain	152675-152669-9200342
Goals setting plays a key role in patient rehabilitation. Goals must be SMART and patient centred e.g developed collaboratively by the therapist and patient	152675-152669-9200504
collaboratively agreeing on what is to be achieved and how it is to be measured.	152675-152669-9200526
The setting of time oriented agreed targets for a process between therapist and patient	152675-152669-9201683
Being able to achieve something by a set time and setting this together with your pt. it's about what defining what the end point is and desires	152675-152669-9204014
An set of realistic outcomes with regards to function/activity/ROM etc. agreed between patient and physio to include short, medium and long term time frames and the strategies to be utilised to reach them.	152675-152669-9204810
Short Term Goals:- Reduce swelling and inflammation post operative and return individual as quickly as possible to there ADLs successfully with a quiet knee and no effusion. Build on functional movement patterns with minimal loading. Aim to commence running with no swelling and full range of movement post gym rehabilitation. Commence good block of functional movement post 6 months post op before returning to full training.	152675-152669-9204908

The process of setting achievable milestones on a 'journey' from where you are to where you want to go /who you want to be	152675-152669-9205010
Defining a specific target which you and the patient will work towards achieving. It should follow the SMART principle.	152675-152669-9205073
Performance goals relating to range of movement, strength, power and performance markers	152675-152669-9205437
Jointly working with patient to create time specific objectives to achieve at time periods throughout their rehab.	152675-152669-9205545
Realistic, achievable goals. Jointly set with athlete. Reviewed regularly. Time specific. Able to be changed/adapted as situation presents itself.	152675-152669-9205933
A measurable outcome that can be achieved by the patient if they follow a progressive rehabilitation programme. This needs to be realistic, measurable and specific. It need to be ongoing and need a time limit. Also to be done by the pt and physio together.	152675-152669-9207263
Yes thank you	152675-152669-9207510
Mutually agreed realistic goals. Discussing and agreeing goals with patients is a skill The whole of the rehab programme should be based around goals both long, medium and short term, this improves adherence and engagement throughout the programme	152675-152669-9208121
Making small goals and targets for the patient to achieve after discussion together. SMART.	152675-152669-9208162
Achievable aims in post op protocols	152675-152669-9208334
A goal which is set by both the physio and patient	152675-152669-9209992
Goals have to be SMART. Specific, measurable, achievable, realistic and targeted to patients particular problem.	152675-152669-9210189
We go through with patients on the 1st appointment what goals they want to achieve both short term and longer term, both subjective and objective goals and use SMART goal setting approach. We also explain to them the goals we would expect them to achieve in order to get 'a good outcome' and the timeframes in which we would expect these to be achieved, these again are short and long term. We review the goals set at regular stages and often find that once they have achieved them, they then want to set further goals.	152675-152669-9210898
Using SMART principle to achieve pt goal. discussing with pt their goals and then working towards this in rehab.	152675-152669-9211614
Identifying the patients objectives and prioritising in line with clinical guidelines, taking into account all contributory factors. More than one sport is implicated	152675-152669-9211586
Goal is a target of achievement agreed between therapist and patient	152675-152669-9211847
The collaborative agreement with patients of goals that are 'SMART', and linked to activities that are of value to the individual patient (patient centred). They can be short, medium and long term.	152675-152669-9211992
Identifying where a patient is in their recovery process, developing an appropriate treatment strategy and reviewing (using objective measures where available) this in a timely manner to reach a point where they have reached their full potential. Involving the patient with this process to ensure the end point is broken down into realistic steps and managing the patients expectations of how far they will reach.	152675-152669-9216395

Devising measurable, realistic, relevant and timed aims agreed between patient and therapist	152675-152669-9216675
achievable and measured increments to be achieved by the patient. Set by the clinician and patient together. Covering objective, subjective and functional consideration.	152675-152669-9216880
Collaborate process of designing achievable aims and the methods/time needed to meet them	152675-152669-9217047
Targets which are set for a patient to achieve, ideally they would be set using the SMARTER format.	152675-152669-9218464
SMART. They need to be specific to patient, measurable, attainable, realistic and timed. This need to be discussed with the patient to see what they want to achieve	152675-152669-9219104
The development of an action plan to motivate a person towards a goal.	152675-152669-9219279
Setting realistic milestones in conjunction with the patient that they can achieve in a timely manner towards full recovery.	152675-152669-9219922
When you, as the therapist, along with the patient decide the expected outcome of treatment.	152675-152669-9223723
developing a route for someone to reach their aims	152675-152669-9224013
Agreeing an achievable, measurable, specific, realistic attainment within a specific timescale with the patient.	152675-152669-9224063
Goal setting is about planning what you want to achieve with the patient in the short and long term. It is important that therapist and patient are aiming towards the same realistic goals.	152675-152669-9224304
Having jointly agreed specific measurable achievable realistic and timed goals, both long and short term eg 2-6/52 vs 6-8/12	152675-152669-9224363
Developing a person-specific action plan, designed to motivate a patient to progress or maintain function in order to meet target(s). Goal setting should be specific, measurable, achievable, realistic and timeframe	152675-152669-9225608
A goal is something a patient wants to achieve	152675-152669-9235191
Patient determined acceptable activity levels and realistic progress - i.e what the patient wants to be able to achieve and when (differentiate between long and short term goals)	152675-152669-9235325
Setting achievable milestones that are short term and long term which are SMART is really important to ensure rehab is effective	152675-152669-9239050
A task a patient wants to reach	152675-152669-9244771
A goal is a patient wants to achieve	152675-152669-9244791
Working with a patient to find a suitable goals for their lifestyle, expectation and return to previous level of function which is deemed realistic and achievable by the physio/medic	152675-152669-9245656
It is engaging in a collaborative approach, identifying with the patients what they intend on achieving through treatment/rehabilitation. For instance do they wish to return back to a particular sport, do they just want to feel less anxious about the movement of their knee. It also should highlight how they may get their (physio input and self management requirements). It should also involve a timeframe. Some negotiation may need to be undertaken if the patient has unrealistic goals or timeframes. Also identifying barriers can be helpful for patients. There also may be goal setting within goals - e.g. during rehab phases some goals may be achieve full knee extension, or leg press 90 kgs, etc	152675-152669-9250270
agreed goal between physio and patient is something they wish to achieve with the help of	152675-152669-9252925

physio rehab	
A method by which aims are outlined for all parties concerned that assist in planning and evaluating progress.	152675-152669-9254033
Initial subjective assessment. Identification of patients own goal, return to work, function, sport, then help the patient to breakdown the activity to focus on the specific requirement to attain that goal ie strength ROM stability reduce pain/inflammation	152675-152669-9254032
A goal is something a patient wants to achieve	152675-152669-9254640
Goal setting is about establishing realistic, achievable objectives within a specified timeframe. Establishing these goals is a negotiated process between therapist and client.	152675-152669-9257110
Discussing subjective limitations or inhibitions with the patient as a result of their pathology to set objectively measurable targets and gains toward improving the subjective limitation.	152675-152669-9258030
Goal setting is a process patients and therapists should go through to establish realistic markers for them to achieve as part of their rehabilitation process. These markers should help keep the individual motivated to achieve their overall return to play state. Goals should be broken down into short term manageable aims, with an overall long term goal.	152675-152669-9260175
Working with your patient to set realistic & motivational outcome targets which correlates with therapist and patient goals	152675-152669-9260232
Joint establishment of specific, measurable targets with regular review and updating of these	152675-152669-9262905
to set specific (as possible) goals measured by means of subjective or objective performance, that are reasonably attainable in a given time frame and recorded so that both the therapist and patient / MDT can interpret the findings. goal setting needs to be athlete focused with the immediate MDT (dr, physio, S&C, parent /coach) revising / reviewing goals set	152675-152669-9263104
Goal setting should be objective, measurable and meaningful to the patient.	152675-152669-9263083
Measurable, timed, achievable objectives set out with and for the patient's successful rehabilitation.	152675-152669-9265073
1) ascertaining what the patient would like to achieve.- trying to make this as specific as possible 2) Discussing this with the patient to understand how realistic this is 3) marrying this up with tissue healing parameters to set a time limit for the goal	152675-152669-9266504
A final goal outcome is agreed with the patient along with agreed interim goals. Goals set are compliant with SMART principles and are therefore specific, measurable, achievable, realistic and timed	152675-152669-9269913
A patient management technique whereby you establish a plan of progression in the recovery of patient during their rehabilitation. This is done via goal setting.	152675-152669-9271469
A process of collaboration in order to identify what each party wants/expects/needs from rehabilitation.	152675-152669-9271911
Clear, concise step-wise description of rehabilitation outcomes based on symptoms and physical capabilities through a inter-disciplinary approach with the client central to and involved in the plan	152675-152669-9274941
Establishing with the client what they would like to achieve, in terms of a level of function, following their ACLR.	152675-152669-9279595
specific timed functional goals set by patient and physio	152675-152669-9292642

agreed markers that allow logical and safe progression of the rehab process	152675-152669-9293856
a meaningful measure target that the individual wants to achieve	152675-152669-9301779
patient directed ambition to achieve functional tasks with clinician input to help direct these with consideration to the clinical presentation. Ultimately this should be a collaborative process between pt and clinician.	152675-152669-9309212
the process of setting patient driven outcomes to management in negotiation with the therapist	152675-152669-9309270
SMART Goal setting is producing a series of achievable objectives to be accomplished during the rehabilitation post injury. Each should be specific, measurable, achievable, realistic, timely.	152675-152669-9309634
From the assessment, identify problem list including psychosocial issues, SIN factor, other medical conditions, level of activity patient needs to return to including sport, taking into consideration these points operation notes and healing time develop realistic short term and long term aims in relation to healing, oedema, strength, co-ordination, proprioception, functional activity and fitness.	152675-152669-9309988
Structural rehabilitation Psychological support Reintroduction to activity/sport	152675-152669-9310676
Achievable targets patient centred for function specific to each patient	152675-152669-9317593
Goal setting is setting step by step methods in order to achieve an overall outcome. The setting of these goals must be specific, measurable, achievable, reliable and to a time scale.	152675-152669-9317792
Patient centred process of identifying specific, measurable, achievable, relevant and timed aims/benchmarks that the patient will strive to achieve during the rehab process	152675-152669-9422485
Timed, achievable, specific	152675-152669-9455983
Discussing with a patient realistic expectations for rehabilitation and return to function/sport after their surgery. Try to make them SMART	152675-152669-9456588
Agreeing a short term/long term goal using SMART principles to allow identification of rehab progression/completion.	152675-152669-9457750

11 Which goal setting strategies do you use for patients who have had ACL surgery? (please provide as many as relevant)

Showing all 124 responses	
SMART goals	152675-152669-9153997
SMART	152675-152669-9154139
Use the SMARTER principle Specific - make them as precise and detailed as possible Measurable - a method by which you can quantify or rate your current position and then determine the amount of improvement required Accepted - goals need to be shared and negotiated with all others involved Realistic - the goal is realistic yet challenging	152675-152669-9156128

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Time phased - date is set for when the goal is to be achieved by Exciting - goal motivates the individual Recorded - the goal and progress towards it are recorded	
Generally use SMART goals, breaking them down into generally short and long-term goals, often with guidance based on experience and evidence base.	152675-152669-9176550
Measurable Realistic Patient Centred Joint goal setting	152675-152669-9179961
Range of movement in the early days and weeks Grade 5 muscle strength within the first 6 weeks Single leg press test and limb symmetry index as a target to reach before running Single leg calf raise test as a target for running Single leg press test for adding plyometrics Figure of 8 running test and bleep test for return to sport	152675-152669-9181365
post op outlines/instructions alongside SMART goal setting	152675-152669-9181839
SMART function hobbie goal life	152675-152669-9182034
Set the goal specific to them and set an appropriate timeframe for the goal to be achieved. Set long term goals, but within those ensure the patient has short term goals to achieve to keep them motivated. Keep the rehabilitation varied to ensure they do not get bored when completing it.	152675-152669-9181779
Smart goals Functional goals Objective goals Pre injury fitness goals	152675-152669-9182623
SMART Return to work related goals Return to sport related goals Weekly & Monthly milestones Mindfulness and Confidence related goals	152675-152669-9182719
SMART goals, identifying what area needs to be worked on, prioritizing	152675-152669-9182801
SMART goals Including AROM, functional tasks, strength proprioception balance	152675-152669-9185179
I work in the acute setting and only see these patients for one treatment when our goals are achieving safety for discharge and advise for ongoing management at home before they see an outpatient Physiotherapist. That said, I do aim to give them simple goals with regards gait reeducation, muscle control, swelling management and range - the goal being that they are as ready as possible to get cracking with the out patient Physio when they start!	152675-152669-9185296
SMART goals	152675-152669-9185492
1. Initial goal to restore full active range of movement - this will involve an exercise and mobilisation program and movement will be measured at intervals throughout the program, with a goniometer.	152675-152669-9186851

<p>2. Reduction of pain to include factors such as ability to sleep at tonight, number of pain killers taken, pain levels experienced measured at intervals using the VAS.</p> <p>3. Ability to perform specific functions eg squat, single leg squat, stairs, jump, hop, run, plyometrics etc possibly determined in consultant protocol and incorporated into exercise program</p> <p>4. Return to work/sport - likely to be determined as treatment progresses</p>	
I'm not sure what this question means. I generally question patients about what their goals of therapy are.	152675-152669-9187768
Based on the appropriate protocol and the patient's objective clinical findings - set a goal to reach the next milestone	152675-152669-9187789
<p>1. Early understanding of the lengthy process of the rehabilitation.</p> <p>2. To follow a rehab programme often provided by the surgeon to attain certain movements and activities along specific time periods.</p> <p>3. Stress the importance of proprioception and take time to ensure the patient understands the concept and its functional value in lay terms.</p> <p>4. Consider the whole MSK implications from head to foot.</p> <p>5. Emphasise the need for good hamstring strength and timing/sequencing to assist proprioception and protect against hyperextension.</p> <p>6. Make targets attainable to enhance compliance.</p> <p>7. In relation to 4 ensure rapid advancement through the regime is not undertaken jeopardising the end result</p> <p>8. Allocate sufficient time for the verbal feedback of negative psychology eg apathy, over confidence, stress/anxiety etc</p>	152675-152669-9187735
SMART based goals	152675-152669-9188421
SMART goals	152675-152669-9188433
<p>ROM</p> <p>Oxford scale strengthening</p> <p>Berg Balance</p> <p>Personal goal such as returning to sport</p>	152675-152669-9189532
SMART goals should be set which are specific, measurable, attainable, relevant and time bound.	152675-152669-9189540
SMART goal setting - often goal setting is in line with orthopaedic protocols and anticipated stage of recovery as well as including the patient's previous level of sports participation in the planning of specific long term goals.	152675-152669-9189797
As above	152675-152669-9189856
have a check list and of various stages of rehab weekly and monthly - will regard other comorbidities	152675-152669-9190508
specific, measurable, realistic, achievable and timed outcomes (Short and long term) set between clinician and patient	152675-152669-9191107
Set goals according to the stage of healing post-operatively and then at different stages according to the amount of loading that can be applied to the reconstructed ligament and surrounding structures	152675-152669-9191400
SMART clinical milestones for progression	152675-152669-9191956
SMART	152675-152669-9192252
SMART goals using the ACL protocol to guide the patient with expectations	152675-152669-9192172

SMART goals using the ACL protocol to guide the patient with expectations.	152675-152669-9193230
I have a basic set of goals and I adapt these for each pt. I print these out and ask them to go away and look at them/modify them. At their next appointment we go through these, make any amendments and agree to them.	152675-152669-9193230
Short-term goal setting. Long-term goal setting.	152675-152669-9195526
Depends upon the individual and the situation	152675-152669-9195843
Patient led	152675-152669-9196453
SMART sports related client focused	152675-152669-9196503
SMART	152675-152669-9197291
Discussion Objective markers Small targets	152675-152669-9197881
SMART goals	152675-152669-9197926
ROM, walking/running distance	152675-152669-9198041
I write down mutually agreed short and long term SMART goals at the start of the assessment and will revisit these regularly throughout the rehab. Our Trust uses the EQ-5D outcome measure at the start and end of treatment.	152675-152669-9197971
PSFS	152675-152669-9198624
SMART goals Functional Relate goals to daily life Motivational interviewing Building confidence	152675-152669-9198744
Protocol based, task based, strength based, functional testing, confidence	152675-152669-9198897
discussion at initial appointment planning at initial appointment continuous review re-setting goals as appropriate always agrees with patient	152675-152669-9198889
dependent on patients presentation, use of short term and long term objective, subjective, and functional goal, agreed with patient	152675-152669-9199033
ROM and strength targets, functional goals	152675-152669-9199329
Progressive exercises / functional tasks	152675-152669-9200342
SMART strategy - apologies not entirely sure what you want here?	152675-152669-9200504
Functional goals from patients perspective. Selection of a/some outcome measures (and/or tools). Defining and agreeing patient's and my role.	152675-152669-9200526
weekly targets for rehab for small incremental improvements Monthly for bigger goals Joint setting of rtp criteria	152675-152669-9201683

Achieving knee flexion Numbers of reps and sets Returning to normal function	152675-152669-9204014
I ensure the patient focusses on their priority and then breakdown what's needed to get there into manageable chunks. As each goal is hit the next is already known and the final destination is clear, hopefully maintaining motivation along the way.	152675-152669-9204810
SMART goal setting.	152675-152669-9204908
Client centred agreements on physical, technical, psychological outcomes / exit criteria	152675-152669-9205010
Mainly functional goals. Split into short term goals and long term goals. Repeatedly measure and reset.	152675-152669-9205073
Rom, strength, power and performance markers	152675-152669-9205437
Goals for different stages; acute/strengthening/unilateral loading/sport specific/return to play. Joint setting with patient/MDT	152675-152669-9205545
Regular contact and review of goals. Reassurance when rehabbing	152675-152669-9205933
unsure of the question, but I will use goals I. These categories: ROM, POWER, BALANCE, PAIN, SWELLING, FUNCTION, I would use functional measuring such as goniometer, tape measure, y balance test. VAS poor pain ect	152675-152669-9207263
Now this question rather presupposes we follow a formula.	152675-152669-9207510
I tend to suggest functional goals when over the intial rehab period.	152675-152669-9208121
SMART strategy.	152675-152669-9208162
Dependent on each surgeons protocols	152675-152669-9208334
SMART	152675-152669-9209992
I use SMART goals. Short, mid and long term goals.	152675-152669-9210189
SMART Make them patient relevant (see also above answer, sorry found thise question quite ambiguous)	152675-152669-9210898
Goals in line with protocol SMART	152675-152669-9211614
I believe in educating the patient , hopefully preop, as to what they can expect from the surgery and myself . Understanding the anatomy, biomechanics and time scales is important. I also ensure that during the early stages they have alternate exs measures to keep them focused.	152675-152669-9211586
Patient orientated	152675-152669-9211847
Early education regarding expected time frames to recovery to enable realistic short, medium and long term goals. Completion of an individual ACL booklet that has a goal setting section which encourages the patient to be involved with their own goal setting and breaking these goals down into steps. The patient is encouraged to problem solve themselves to promote intrinsic self motivation and internal HLOC.	152675-152669-9211992

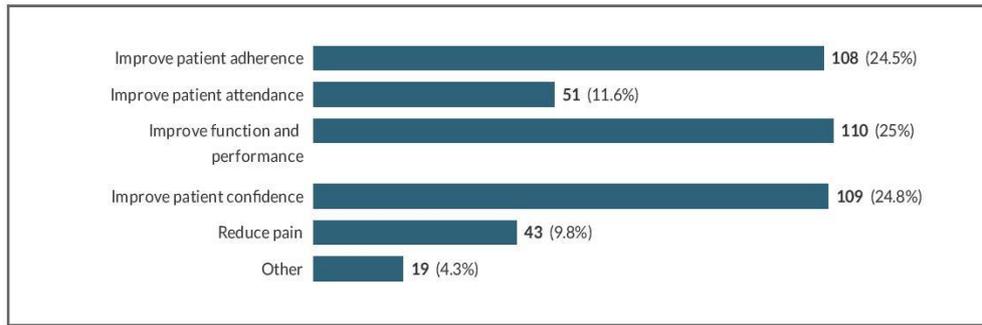
Structured 6 week, 3 month, 6 month goal reviews and resetting if needed. Review sessions may be longer for patients identified at the start of rehab as being at risk of poor outcome due to psychological reasons	
At the Trust I work in the rehab plan is very protocol driven. So I set goals in line with the protocol before moving the rehab on e.g. obtain full ROM at knee joint, wean off elbow crutches, equal strength in quads and hamstrings bilaterally, equal length in gastroc and soleus bilaterally, plyometric ability, sport specific training.	152675-152669-9216395
Being able to complete specific exercises relevant to stage of rehab, being able to run, Biodex tests and improving results, ROM improvement, sports specific activities and returning to non-impact and impact sports	152675-152669-9216675
Functional tasks including adequate control of simple ACL loading movements ie squat, single leg dip etc. objective strength targets. VAS reporting	152675-152669-9216880
no specific method otherwise than described above	152675-152669-9217047
SMARTER	152675-152669-9218464
Short-term goals broken up into rehab phases like stepping stones and progressing through different levels. Followed by functional and specific long-term goals that may incorporate different short-term goals to achieve this	152675-152669-9219104
SMART goals	152675-152669-9219279
SMART functional psychological	152675-152669-9219922
Take small steps, set target dates	152675-152669-9223723
patient specific short and long term goals	152675-152669-9224013
usually short and long term milestones as per ACL rehab protocol usually provided by consultant / physio dept	152675-152669-9224063
Short to long term: improvement in ROM improvement in strength gait re-education balance and proprioception rehabilitation increase in agility and power training gradual return to original sport reassurance throughout	152675-152669-9224304
Protocol and milestone led whilst also taking into account chronicity of injury / non-participation / altered participation and thoughts / feelings about re-introduction of cutting / bounding / change of direction at speed	152675-152669-9224363
Small achievable goals, importance of goal, realistic time frames, short and long term, reassess goals, plan out the goal, patient-led, re-assess and modify as necessary	152675-152669-9225608
SMART	152675-152669-9235191
Subjectively - what the patient wants to be able to achieve. Outcome measures e.g Cinti knee scoring and KOOS Hop test can be a useful measure of function and ability where applicable	152675-152669-9235325
Function based Hobby based	152675-152669-9239050

Agreed between clinician and patient Short term and long term	
SMART	152675-152669-9244771
SMART	152675-152669-9244791
GAS Smart Pegs	152675-152669-9245656
First of all longterm, on what they wish to get back to e.g. what sport, what level. Short term will involve looking at the protocol and discussing aims in a particular phase and then relating that back to patient longterm goals.	152675-152669-9250270
work or sport related goals PSEQ outcome measure	152675-152669-9252925
use long and short term goals, set target dates, build in progress checks	152675-152669-9254033
This not relevant to my area.	152675-152669-9254032
SMART goals	152675-152669-9254640
Use throughout the rehabilitation process from preoperative to return to sports.	152675-152669-9257110
Functional performance based. Obejctive measure focussed.	152675-152669-9258030
Imagery SMART Targets	152675-152669-9260175
Department: Using outcome measures for discharge (IKDC scores, hop test, star tests) Patient - return to sport goals	152675-152669-9260232
Formal & informal meetings with working document to back up that everyone can access	152675-152669-9262905
setting a mixture of process goals, performance goals outcome goals.	152675-152669-9263104
Phased goals - early, mid, late stage. Set jointly with S+C and sports coach. Objectively measured and progressed in conjunction with accepted timescales but NOT exclusively timescale driven.	152675-152669-9263083
As above and including the use of a programme of exercises provided for the patient to follow (with guidance from his/her physio) on a week by week basis. Also use of lower limb exercise classes.	152675-152669-9265073
Following expected markers on post surgical protocols Patient self setting goals	152675-152669-9266504
Setting of agreed "process" goals such as range of movement, EMG symmetry, isokinetic measures and gym loads alongside progressi functional goals which are athlete, sport and context specific. Where I work we have developed a phased return to performance framework which is formulated for each athlete's specific needs.	152675-152669-9269913
Short term/long term goals	152675-152669-9271469
Initial discussion and ongoing assessment at each point of contact.	152675-152669-9271911
Pain levels, Swelling	152675-152669-9274941

<p>Objective measures based on limitations</p> <p>Functional objective outcomes</p> <p>Gym based outcomes</p> <p>Fitness based outcome</p> <p>Sport-specific demands outcomes</p> <p>Coach-led technical and tactical outcomes</p>	
I use both long and short term goals in a SMART format, written down in the clients notes as well as encouraging the client to write them down.	152675-152669-9279595
mostly sports specific as very relevant to patient	152675-152669-9292642
short, med, long term and ultimate goals, Physical and sport specific markers that allow progression by ability not by time frame while still respecting the pathology and healing process	152675-152669-9293856
joint discussion	152675-152669-9301779
Education of patients with regard to surgery and post op requirements for rehab including stages of rehab is important in the first instance.	152675-152669-9309212
just ask them what they want to be able to do by end stage follow consultant programme til D/C then take over	152675-152669-9309270
Done on an individual basis, however, they can help break down a long recovery phase allowing patients to show progression towards the overall goal. They may be to increase ROM, strength, repetitions to a given level. To be able to exercise for a given length of time. To return to activity short of overall goal (e.g. cycling, jogging, jump landing).	152675-152669-9309634
discussion/education of op to patient and discuss realistic aims in respect to healing, what they need to achieve before progressing to next goal to prevent injury or delaying process, identify how they are progressing	152675-152669-9309988
Discussion with patient to ascertain what are their priorities. Modification of plan according to that.	152675-152669-9310676
Outcome measures for target planning. Running Sport specific functions	152675-152669-9317593
Motivational theory, verbal feedback + Positive cues.	152675-152669-9317792
open discussion with the patient for personal aims and discussion of sport specific aims. Document via soap notes.	152675-152669-9422485
Self setting with guidance	152675-152669-9455983
Patient specific functional scale Objective measures and individual targets over a set amount of time -Short term and long term Education re expectations	152675-152669-9456588
Identification of an activity they wish to return to. SMART goals	152675-152669-9457750

12 What is the purpose of using goal setting strategies for patients following ACL surgery? (can select more than one

answer)

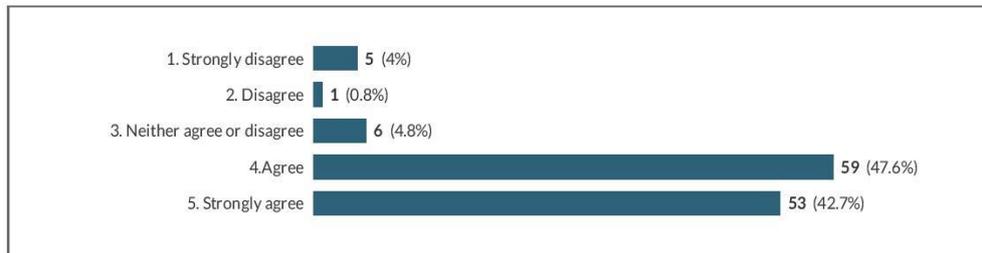


12.a If you selected Other, please specify:

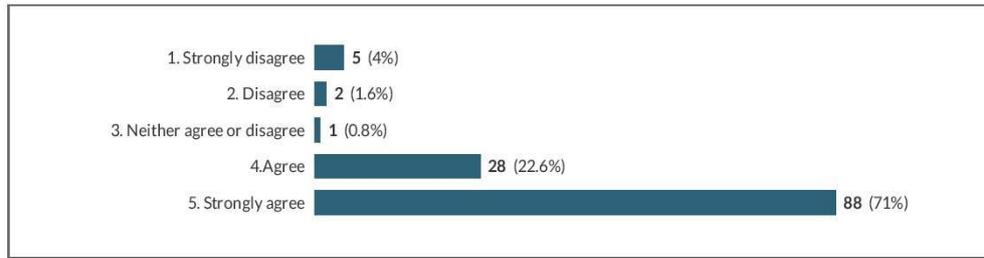
Showing 5 of 19 responses	
directs treatment and management	152675-152669-9191107
Return to work/sport.	152675-152669-9193230
Motivate patients	152675-152669-9195526
To have an end point and an objective	152675-152669-9197881
motivation	152675-152669-9198041

13 Please indicate how strongly you agree that goals set following ACL surgery are focussed on the specified factors by selecting one option from each row.

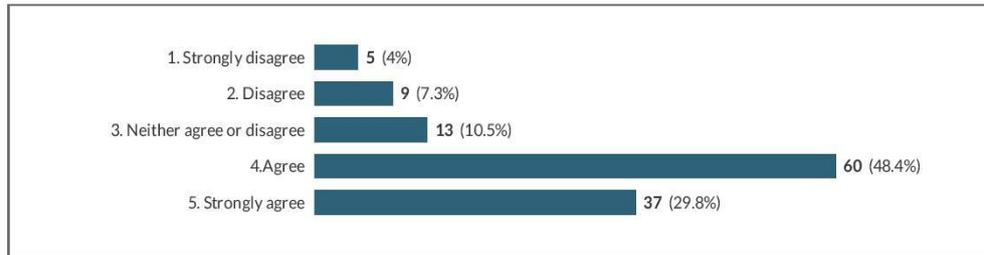
13.1 Objective focused (e.g. AROM)



13.2 Function/ performance focused (e.g. running, playing sport)



13.3 Psychologically focused (e.g. confidence building)



14 How would you know that goals set are meaningful to a patient following ACL surgery?

Showing all 124 responses	
Patients set their own goals	152675-152669-9153997
The person will set their own goal	152675-152669-9154139
Ensuring communication is maintained with the client throughout and ensuring the goals set are developed between both the practitioner and the client.	152675-152669-9156128
Agree them with the patient. Ensure they understand them and recap at intervals through the process for encouragement and reassurance.	152675-152669-9176550
Joint setting of goals with the patient	152675-152669-9179961
Discuss with the patient and monitor their adherence and compliance in trying to achieve he goal	152675-152669-9181365
patient feedback achieving set goals	152675-152669-9181839
Joint session - set them with patient	152675-152669-9182034
The goals need to be individual to the patient, their commitments and their sport (if applicable).	152675-152669-9181779
You would set the goals with the patient and they would be their goals as much as your goals	152675-152669-9182623
By asking the patient to be involved with the goal setting procedure and discussing with them what they would like to be able to within a given time period. This should come alongside	152675-152669-9182719

education of graft repair timescales / biology.	
Asking the patient. use of goal setting to identify goals and ambitions	152675-152669-9182801
The only true way to know this is through patient feedback and that the goals set originally are those of the patient and not the therapist which is often the case.	152675-152669-9185179
Patient feedback, response and progression.	152675-152669-9185296
Ensure they link to any hobbies or interests they have. Let the patient lead the goal setting.	152675-152669-9185492
The patient's own main goals should be determined at assessment so the therapist has an awareness of what is most meaningful to them	152675-152669-9186851
By using a rating scale - they pick the goal, we ask them how important the goal is to them using a 10 point scale. Anything over 7 could be considered a meaningful goal, if below 7 they should reconsider their goal.	152675-152669-9187768
Establish their end goal - what they want to return to and then break the goals down into short term, medium term and long term so that they can see the relevance and how their care will progress	152675-152669-9187789
should be a fluid system of re evaluation and changing any non working or erroneous judgments. Ultimately a good final rehab result is the ultimate guide	152675-152669-9187735
Patients set goals	152675-152669-9188421
Physio and patient sets the goals	152675-152669-9188433
Patient centred and set by them	152675-152669-9189532
I would discuss them if possible before the surgery or post surgery during first face to face interview.	152675-152669-9189540
Goals should be discussed and agreed with the patient to make sure that they understand the importance of the desired outcome and also feel that the goal reflects their desired outcome.	152675-152669-9189797
Discussion between therapist and patient re: their beliefs of their goals, and what THEIR parameters are for them being met	152675-152669-9189856
continual assessment / questioning re any problems	152675-152669-9190508
they have been agreed with the patient and link to subjective history	152675-152669-9191107
Patient refers to the goals especially when they have been achieved or if they are difficult to achieve	152675-152669-9191400
liaise with them have a discussion	152675-152669-9191956
Link them to activities/functions that they participate in..	152675-152669-9192252
The goals should be set by the patient with guidance from the therapist	152675-152669-9192172
Discuss with pt and reach agreement.	152675-152669-9193230
Through discussion of the goals with the patient.	152675-152669-9195526
Communication with the player constantly	152675-152669-9195843
Because the patient is included and in some respects "leads" the goal setting process	152675-152669-9196453
Communication /discussion	152675-152669-9196503

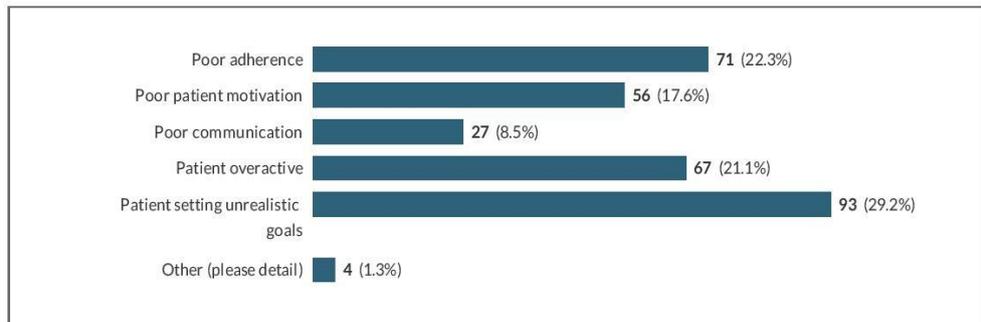
Communication with the patient, patient centres goals	152675-152669-9197291
Through discussion in what they are looking for	152675-152669-9197881
Assess the patient's understanding of why the goal has been set.	152675-152669-9197926
ask patient for feedback/discuss	152675-152669-9198041
I initially ask the patient what they would like to be their goal and ensure it is mutually agreed.	152675-152669-9197971
Through discussion of previous sports etc. They can set the goals.	152675-152669-9198624
They are key in the development of these	152675-152669-9198744
let patient initiate conversation on goals using open questioning	152675-152669-9198897
discussion with patient	152675-152669-9198889
by discussing them with the patient	152675-152669-9199033
Patient compliance and subsequent results gained.	152675-152669-9199329
Decide on them with patient	152675-152669-9200342
They are set by the patient	152675-152669-9200504
they are should be involved in the process of setting them and amending them as required/relevant.	152675-152669-9200526
Set them jointly	152675-152669-9201683
Setting them together	152675-152669-9204014
It had been discussed during the first goal setting exercise and reiterated along the way.	152675-152669-9204810
Involve patient fully in the setting of the specific goals	152675-152669-9204908
They are set in conjunction with the patient so they have ownership	152675-152669-9205010
They should be set in co-ordination with the patient. The patient should define what they wish their goals to be before the therapist adds their opinion.	152675-152669-9205073
Important to patient	152675-152669-9205437
Discuss with them. Jointly set.	152675-152669-9205545
Setting the goals together. Knowing your athlete/patient. What they want to achieve/return to.	152675-152669-9205933
communication with the pt, setting these goals are done together with the pt, and need to be in agreement.	152675-152669-9207263
Previously trained in developing congruent well formed outcomes with people using a coaching & nlp approach	152675-152669-9207510
Goals should be mutually agreed and therefore always meaningful to the patient	152675-152669-9208121
Discussion with the patient on long and short term goals	152675-152669-9208162
Patient willingness to complete. How close they are to achieving goals. How well they are progressing with their re-hab	152675-152669-9208334
Because patient helps with setting goals	152675-152669-9209992
By discussing them with the patient.	152675-152669-9210189

Because we get them to set goals that are specific to them, as well as the minimum goals we would want them to achieve	152675-152669-9210898
Discussing with them	152675-152669-9211614
Discussion	152675-152669-9211586
Discussed and agreed	152675-152669-9211847
By encouraging the patient to take control of setting their own goals. By ensuring that goal setting is not led by the therapist (or other people involved in the patients rehab i.e parents, coaches, team mates) By asking the patient what it is they want to return to and what they enjoy doing.	152675-152669-9211992
Explanation of why goals are set and involve the patient with the decision. Equally accurate documentation of things like ROM and strength can offer proof of progress when patients feel like they are not getting better.	152675-152669-9216395
Ask and discuss with patient	152675-152669-9216675
Because they are discussed thoroughly and agreed with the patient based on where they are and where they want to end up.	152675-152669-9216880
The help to design them	152675-152669-9217047
Involve patient in goal setting, for example if they want to return to activities/sport	152675-152669-9218464
As they are set with the patient and discussed with them during setting to ensure they related to what they hope to achieve	152675-152669-9219104
Ask the patient what goals they would like to achieve and establish the level of function they wish to attain	152675-152669-9219279
They should be based on patients lifestyle/functional goals and be agreed by the patient.	152675-152669-9219922
Because I set them with the patient	152675-152669-9223723
make sure they are collaborative	152675-152669-9224013
Ask the patient to numerically prioritise their list of goals	152675-152669-9224063
Goals should be set openly with the patient i.e. patient should be fully aware of what the goals are and why they are important.	152675-152669-9224304
Ask them, involve them in the process	152675-152669-9224363
ensuring patient led	152675-152669-9225608
Patient is involved with setting the goals	152675-152669-9235191
The goals should be determined by the patient, they should be involved in setting them so gives more adherence to achieving them.	152675-152669-9235325
Ask the patient- Feedback from patient	152675-152669-9239050
patient sets goals	152675-152669-9244771
Patient is involved with the process	152675-152669-9244791
They are developed together	152675-152669-9245656
I would ask the patient.	152675-152669-9250270

discussed during initial subjective assessment and as required during rehab	152675-152669-9252925
discuss the goals, and have their goals along side your own clinical goals/ incorporate them	152675-152669-9254033
The goal should be mutually agreed. What does the patient wish to achieve and plan from there.	152675-152669-9254032
The patient is involved with the goal setting process	152675-152669-9254640
by negotiating the goals with the patient themselves on an individual basis	152675-152669-9257110
By discussing the goals with the patient to find out whether they feel the goals are relevant and appropriate, and more importantly if they are happy with the goals set.	152675-152669-9258030
Have a discussion with them regarding their overall goals.	152675-152669-9260175
Patient led	152675-152669-9260232
Set in consultation with them and their coach	152675-152669-9262905
spend time talking to them about their goals of rehab as this significantly impacts on their rehabilitation journey	152675-152669-9263104
Set jointly with athlete and agreed.	152675-152669-9263083
By discussing their lifestyle and what activities (including the time scale) they want to be able to return to.	152675-152669-9265073
Ask them	152675-152669-9266504
Through history taking and a process of agreed goal setting, an understanding of the athletes needs and expectations can be reached allowing goals to be shaped to be meaningful to each athlete.	152675-152669-9269913
Patients sets the goals / patients choice.	152675-152669-9271469
By discussion with them	152675-152669-9271911
Evidence Patient feedback and integration Coach buy-in	152675-152669-9274941
They are set by the patient with the assistance of the physio to ensure the goals are appropriate.	152675-152669-9279595
functional outcome - IKDC	152675-152669-9292642
goal setting is always agreed and discussed with patient and their understanding is paramount to success.	152675-152669-9293856
The are discussed and made together with the patient	152675-152669-9301779
Discuss this with the patient	152675-152669-9309212
get them involved in decision making they tend to adhere better to advice/ex prog if have ownership	152675-152669-9309270
They should be produced in conjunction with the patient to assure that they are meaningful	152675-152669-9309634
That they are discussed and agreed with the patient. This involves educating the patient on the process	152675-152669-9309988
Asking them. History taking	152675-152669-9310676

History taking	
Usually return to sport	152675-152669-9317593
Communication with patient, Discussing everyday routines, hobbies and jobs. Working out what motivates them to get up on a morning will enable goals to be more meaningful and therefore achievable.	152675-152669-9317792
use SMART goals process sport specific age specific gender specific consideration of function level/ability consideration of facilities and time commitment	152675-152669-9422485
If patient set them	152675-152669-9455983
Discussion with patient Patient identifying them Relevant to rehabilitation guidelines	152675-152669-9456588
Relevance to previous activities. Age. Occupation.	152675-152669-9457750

14.a Have you ever experienced any issues related to goal setting in patients who have undergone ACL surgery? (can select more than one answer)



14.b There may be times when a patient does not achieve a goal, for example: A non-compliant patient results in the goal not being achieved. Can you describe what you typically do if a patient does not achieve a goal?

Showing all 124 responses	
Educate the patient to re-establish goals	152675-152669-9153997
Talk to the patient and explain the importance of the goals	152675-152669-9154139
Re dress the issues that may have caused the non-compliance	152675-152669-9156128
Reassure them that there is a range of responses and timescales...but go on to discuss how they can help themselves to speed up the process and 'get back on track'.	152675-152669-9176550

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Discuss reasons for this with patient to investigate if there are any underlying issues	152675-152669-9179961
Discussion surrounding their understanding of the importance of achieving the goal. It depends if the goal is specifically set by them as it may be a renegotiation as they decide they want to set a different goal	152675-152669-9181365
review the goals review the barriers to the goals - during discussions with patients reset goals with altered parameters to make more achievable	152675-152669-9181839
reassessment of goals, function and reassess any complications or barriers to recovery	152675-152669-9182034
Re-discuss the goal and the overall aims of the rehabilitation. Set a new time frame to achieve the goal.	152675-152669-9181779
Check to make sure the goal is not unrealistic and also identify if it is due to a surgical complication or non compliance from patient	152675-152669-9182623
Discuss what factors they felt reduced their adherence. Attempt to adjust their core values in regards to why the rehab is important. Further education of the healing process and the requirement for them to be a key driving factor in their own rehab.	152675-152669-9182719
Reset patient goals with patient , analyse the factors with the patient why the goals were not achieved and how it can be improved and met	152675-152669-9182801
Discuss the goal that was set and try to work out why this goal has not been achieved with the patients input. Once this has been discussed the goal can sometimes be adapted to a lesser activity which may allow the patient to break down the goal that they wish to achieve and hopefully then go on to achieve this goal.	152675-152669-9185179
It depends on the patient - sometimes I take a tough approach, sometimes a reassuring approach, sometimes I refer to a colleague for a fresh approach. I use my judgement at the time.	152675-152669-9185296
Discuss with the patient what they want to achieve from physiotherapy, do they still have the same goals? Any barriers to treatment/ compliance?? review goals.	152675-152669-9185492
1. Advice as to why the goal hasn't been achieved and ensure the patient has an understanding of this 2. Set new goals with the understanding of how they are to be achieved	152675-152669-9186851
Understand what the patient was non-compliant - pain / fear / goal too advanced / time / work / other commitments. Reset the goal to a lower, more achievable goal.	152675-152669-9187768
I either re-set the goal so that it is perceived as more achievable or discuss the situation and any potential barriers and try and help the patient address them and re-set the timeframe.	152675-152669-9187789
1. self evaluate my clinical processes. 2. Re evaluate the patient 3. Speak openly with the patient 4. Reassure where appropriate 5. Refer to another clinician where appropriate	152675-152669-9187735
Discuss the issue and set new goals	152675-152669-9188421
Educate the patient and set new goals	152675-152669-9188433
Discuss with the patient why they have not achieved the goal and discuss the repercussions of not obtaining it.	152675-152669-9189532

I would assess their condition and set that goal or similar relevant goal. In particular i would like to know what were the barriers like poor motivation, time etc.	152675-152669-9189540
Discuss with the patient the reason that the goal has not been achieved and agree further strategies to ensure the achievement of the goal for the future. It may be necessary to discuss whether the goal set is important to the patient or whether it is due to the lack of importance to the patient that this goal has not been met. Goals may subsequently need to be changed to accurately reflect the desired outcomes of the patient as well as the therapist.	152675-152669-9189797
Re-address goals with patient, reset goals if appropriate, discuss barriers to completion	152675-152669-9189856
emphasise need to	152675-152669-9190508
assess the reason why and address this	152675-152669-9191107
Ensure that the patient takes responsibility for their knee and is actively involved in setting their goals	152675-152669-9191400
re set the goal in discussion with the patient	152675-152669-9191956
Assess why, with the patient, discuss the barriers, and then try and adapt the goal or set a new one, with the prior information in mind.	152675-152669-9192252
review the goals and discuss a action plan.	152675-152669-9192172
Re-assess to make sure no issues e.g. graft broken or infection etc. If clinically all stable then reassure pt all is well. Address any concerns. Express my concerns that a goal has not been achieved and agree a new target date for that goal.	152675-152669-9193230
Discuss why the goal has not been achieved and alter the goal accordingly.	152675-152669-9195526
Discuss the goals and work towards a realistic target. Always reevaluation of the goals	152675-152669-9195843
Re-assess and reset goals as progress indicates	152675-152669-9196453
Client discussion ,	152675-152669-9196503
Reset goals, ask patient what they think could be don't to help achieve goal	152675-152669-9197291
Try to break down as to why they ahve not achieved it ir have the been over active? have they not followed the advice given?	152675-152669-9197881
Reset goal after discussion about why goal was not reached	152675-152669-9197926
reassure and reset	152675-152669-9198041
Re-evaluate the goal - was it an unrealistic goal? Was it due to lack of compliance from the patient? Is there anything I could have done better to enable to patient to reach the goal? I would then discuss this with the patient and make new goals that are more appropriate.	152675-152669-9197971
Discuss and maybe break the goal down into easier chunks	152675-152669-9198624
Reassess the situation, discuss what problems/barriers there have been in order to find a solution to move forward	152675-152669-9198744
discuss possible reasons and plan of action	152675-152669-9198897
review reasons for this discuss with patient re-set goals review plan consider alternative more realistic goals	152675-152669-9198889

discuss with patient and reset goals	152675-152669-9199033
Educate and encourage.	152675-152669-9199329
Further explanation as to why it is important	152675-152669-9200342
Try to change my approach. I think it's too easy to place blame on patients when altering our approach may improve adherence. I also believe a collaborative approach e.g one message from the team also helps.	152675-152669-9200504
explore the reasons with the patient (and the surgeon if relevant) to find an explanation.	152675-152669-9200526
Discuss the reasons for it Re evaluate the goal / time Agreed plan of action	152675-152669-9201683
Re focus and re set goals achievable to that pt	152675-152669-9204014
Educate them re. the importance of this (unachieved) goal in order to reach their overall priority goal.	152675-152669-9204810
Relate the importance of the goal to the outcome of the injury clinically. If the goal is relevant to a high level and will effect an outcome re set goals and continue working with patient involved in goal setting.	152675-152669-9204908
Need to understand why they didn't achieve. Was the goal too high? Was the motivation lacking? We're there confounding situations / obstacles that stood in the way. By understanding these, you can intervene appropriately.	152675-152669-9205010
Review and reset other short term goals to work back towards their original goal.	152675-152669-9205073
Educate on reasons for not achieving	152675-152669-9205437
Discuss reasons that goal wasn't achieved. Identify reasons and take into account for further goal setting.	152675-152669-9205545
Review the goal. Discuss with client what they feel about the goal not being achieved. Focus on this goal again or change the goal if circumstances have changed	152675-152669-9205933
Explain the reason for the goal not being achieved, but always give confidence that the goal will be achieved if full participation and working hard from the pt.	152675-152669-9207263
I always set achievable goals which in the main the person surpasses. Its more common that I am needing to keep them waiting in readiness for the next phase.	152675-152669-9207510
Question adherence to rehab programme, explore phsycological barriers to completion	152675-152669-9208121
Try and either break it down in to a smaller target or alter it slightly to make it more achievable.	152675-152669-9208162
Explain to them that it will be detrimental to their rehab and will cause longstanding problems. May increase the number of times I see a patient to make sure they will achieve that particular goal	152675-152669-9208334
Discuss why the goals have not been achieved and set new goals	152675-152669-9209992
Use an outcome measure often to highlight the physical deficit (eg Uni of Salford SLD Outcome Measure)	152675-152669-9210189
Explain to them that they are not on path to achieve the goal and what they need to do to get back on track. Explain the consequences of not achieving the goal. And depending on what goal it is the we may decline to continue treating the patient because we can not progress them on or if they have achieved all our goals and it is a self set goal then we may again say that we	152675-152669-9210898

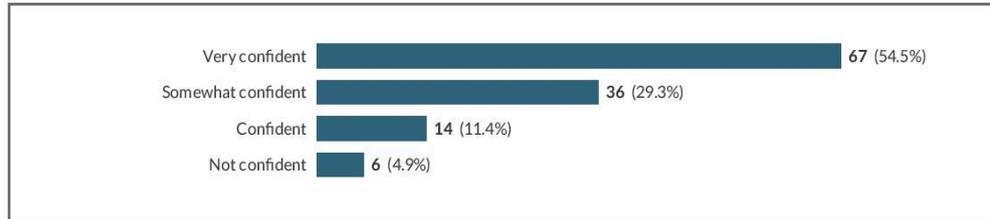
or, or if they have achieved all our goals and it is a set goal then we may again say that we can not help them any further. We put a big emphasis on self ownership.	
Education as to why, emphasis on importance of goals/ compliance in achieving outcome	152675-152669-9211614
Help them understand the implications	152675-152669-9211586
Alter the goal to something more achievable	152675-152669-9211847
We review the goal and problem solve with the patient as to why it has not/is not being achieved. We will reset or change the goal if necessary. We will endeavour to determine what the underlying factor is and address that factor ie unrealistic goal setting, low patient mood, poor rehab adherence. If the patient has finished rehab eg self discharged then we would reflect upon how we could do this better in future. We also collect data for audit to enable improvements in service eg physio training, changes to service	152675-152669-9211992
Explain their responsibility to their rehab and the consequences of not completing the process. Try to look at barriers which can be overcome to improve the patients compliance.	152675-152669-9216395
Discuss with the patient why they have not achieved it and make a plan of how to achieve the goal in future	152675-152669-9216675
Reinforce the necessity to be incremental and issue the failed/recurrence data	152675-152669-9216880
Re-set goal - discuss why goal not achieved and design a method to ensure this goal can be met	152675-152669-9217047
Discuss with patient why goal has not been met and reset a similar/alternative goal using the SMARTER format ensuring the patient is aware of the goal's importance	152675-152669-9218464
Find out why this has happened and is it due to patient or was it an unrealistic goal to set for that time frame. Explain to patient then why this goal may not have been achieved and adapt if required	152675-152669-9219104
Discuss with the patient why they haven't achieved the goal, establish an action plan to correct this and/or adjust the goal if necessary.	152675-152669-9219279
I try and set smaller goals with a view to achieving that goal. I also discuss the consequences of not achieving that goal with the patient and make it more functional/achievable in order to try and improve compliance. I would also discuss why that patient was non compliant to try and factor this into the goal setting.	152675-152669-9219922
We analyse together why we think the goal has not been achieved and what we can both do to improve.	152675-152669-9223723
discuss what their aims are again and reset the goals to be more achievable	152675-152669-9224013
Set a more achievable short term goal with a view to achieving the original goal providing it was realistic in the first instance	152675-152669-9224063
Try and re-iterate the importance of the rehabilitation in relation to return to normality and prevention of future injury.	152675-152669-9224304
Ask them why they feel they haven't achieved it, look back and ask them if they thought it was realistic / achievable in the first place, what were the barriers to achieving it, what are the barriers to achieving further goals, have they learned from the experience of failing to hit a target previously? Maybe not related to this injury / other aspects of life	152675-152669-9224363
find out why is patient not meeting goal?! why are they not motivated?! why are they not complying?! Reassess goal, focus on it	152675-152669-9225608
Educate the patient	152675-152669-9235191

if they've tried hard but don't achieve due to persistent weakness/ pain/ confidence etc. its important to reassure them, focus on what needs to be addressed and continue the goal based rehab. Maybe move from group or gym based rehab back to one-to-one after reassessing, give more time. If its due to lack of compliance or DNAing appointments, then they need a bit of a talking to, so that they understand the importance of compliance to the long term benefit of the op.	152675-152669-9235325
Make patient aware Ask them why not achieved Re-set with benefits explained to patient	152675-152669-9239050
Discuss with the patient and find a solution	152675-152669-9244771
educate the patient and find out why they have not achieved the goal	152675-152669-9244791
Discuss with them why, reset the goal and discuss how they will achieve this target explicitly and emphasise the consequences of compliance v non compliance	152675-152669-9245656
Ask the patient why they feel this goal has been missed. Reassess with the patient if that goal is still important. Then discuss what steps may be required to get back on track.	152675-152669-9250270
write discharge letter to consultant stating what participation/compliance patient had with NHS guidelines	152675-152669-9252925
Discuss the fact and suggest the impact it may have on the prognosis / course of rehab	152675-152669-9254033
In other setting ask directly what is preventing the patient from achieving the goal, then explore the reasons with the patient, is it pain, is it the time it takes does time management need to be addressed, is it fear of damaging the repair.	152675-152669-9254032
Talk to the patient and set new goals	152675-152669-9254640
Review and discuss why the goal wasn't met with the patient.	152675-152669-9257110
Either reset the goals to maintain achievability Or Alter the treatment/managment programme to improve adherence.	152675-152669-9258030
Re-set the goals, and change the ways that we as a team (patient and therapist) are going to work to achieve those goals.	152675-152669-9260175
Use outcome measures to demonstrate compliance. Motivational discussions Offer class based rehab for peer motivation	152675-152669-9260232
Re-evaluate the goal - change either the goal or the strategy for achieving it	152675-152669-9262905
review the goals set. try and identify the factor(s) which prevented them from reaching that goal. set a new one but the patient needs to be onboard / be realistic about their expectations.... empowerment is fundamental as so is taking ownership	152675-152669-9263104
Review objective markers and reasons for non achievement. Collaborative process with athlete; coach and S+C coach.	152675-152669-9263083
Explain the importance of rehabilitation and the consequences of not doing.	152675-152669-9265073
Discuss why the goal was not achieved, Try to create a realistic plan to meet this goal or reset the goal so it is more realistic	152675-152669-9266504
Within our phased return to play framework the athlete is unable to progress onto the next	152675-152669-9269913

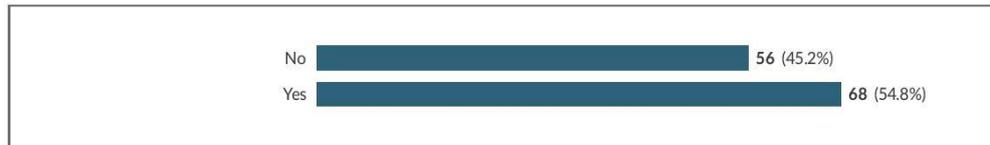
<p>them out, please learn to play from an athlete's point of view to progress into the next rehab phase until goals are fulfilled so overall recovery time is delayed. Athletes are made aware of this phased process at the outset.</p>	152675-152669-9277110
<p>Reinforce and explain to patient</p>	152675-152669-9271469
<p>Reassess input to identify if anything could be done to help patient meet goals. Discuss with patient if goals are actually achievable in their view.</p>	152675-152669-9271911
<p>Review the relevance of the goal with the athlete and coach. If not relevant reset the target. If relevant allow the to accept responsibility and determine the next step in discussion with physio and coach</p>	152675-152669-9274941
<p>I offer what I think is a good explanation for the goal not being achieved and suggest ways in which the goal may be achieved at a later date.</p>	152675-152669-9279595
<p>motivate patients</p>	152675-152669-9292642
<p>take the process back a stage and have an explicit and agreed plan to ensure they get back on track</p>	152675-152669-9293856
<p>help them achieve it</p>	152675-152669-9301779
<p>Understand why this has happened e.g. has the patient understood what their responsibility is, have they been compl. Ensure that they fully understand what they should be doing and why (education again). Help put in place any treatment strategies that help to achieve the above</p>	152675-152669-9309212
<p>discuss with them why and strategies to resolve if poss. if its due to factors such as poor surgical repair/Oa etc discuss with them and offer options/solutions</p>	152675-152669-9309270
<p>No as this is completely dependant upon the assessment as to why they have failed to achieve the goal. e.g. if they fail to attain ROM target they may have suffered surgical complication, muscle tightness, meniscal injury. If the goal relates to failure to achieve goals of function or strength this would be explored- what has the patient been doing at home, why do they feel unable to return to a given activity etc.</p>	152675-152669-9309634
<p>review my skills in respect to assessment, identifying the long term aims and education to the patient</p>	152675-152669-9309988
<p>Wxplain in a calm manner what went wrong and try to educate patient on the nature of the injury (structural aspect, rehabilitation timeline, tissue recovery etc.). Setting goals again.</p>	152675-152669-9310676
<p>Readjust or plan</p>	152675-152669-9317593
<p>Alter the goal to something more achievable, Break down the overall goal into smaller steps to enable the patient to become happier with achieving small targets.</p>	152675-152669-9317792
<p>discuss why - is it a change in long term decision making - e.g., retirement from sport, change of sport/lifestyle/personal factors or issues with rehab type, lack of compliance if appropriate reset goal, e.g. change timeline, set intermediate goals to improve motivation</p>	152675-152669-9422485
<p>Reassess and discuss, setting new easier goals and targets until they achieved</p>	152675-152669-9455983
<p>Discuss why, re-assess the goal (was it realistic), re-assess the time-frame, reassure/motivate if required</p>	152675-152669-9456588
<p>Adjust their time achieve this. Focus on and praise what they have achieved regardless of whether they have achieved their specific</p>	152675-152669-9457750

... and provide training, not just on the registration of medical staff, but on their specific goal.

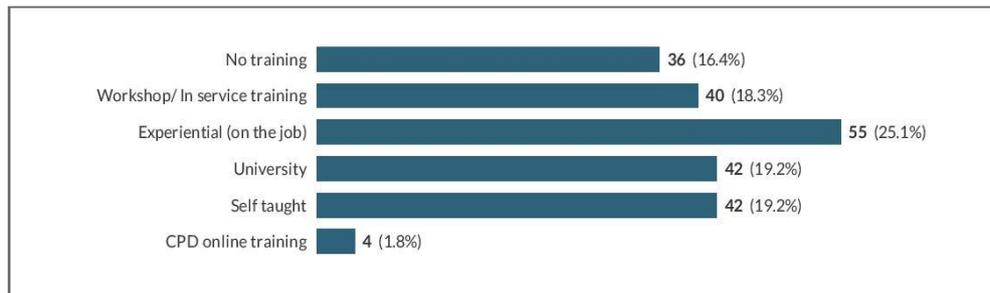
14.c How confident do you feel in implementing a goal setting programme for a patient following ACL surgery?



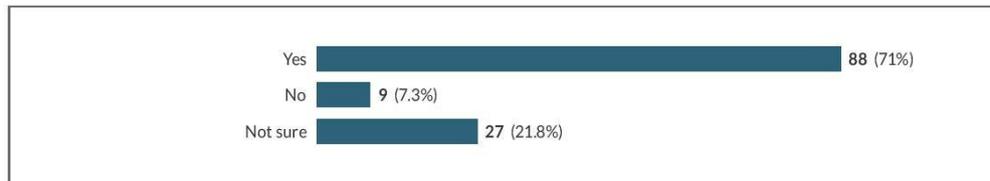
14.d Have you ever received any training on goal setting strategies?



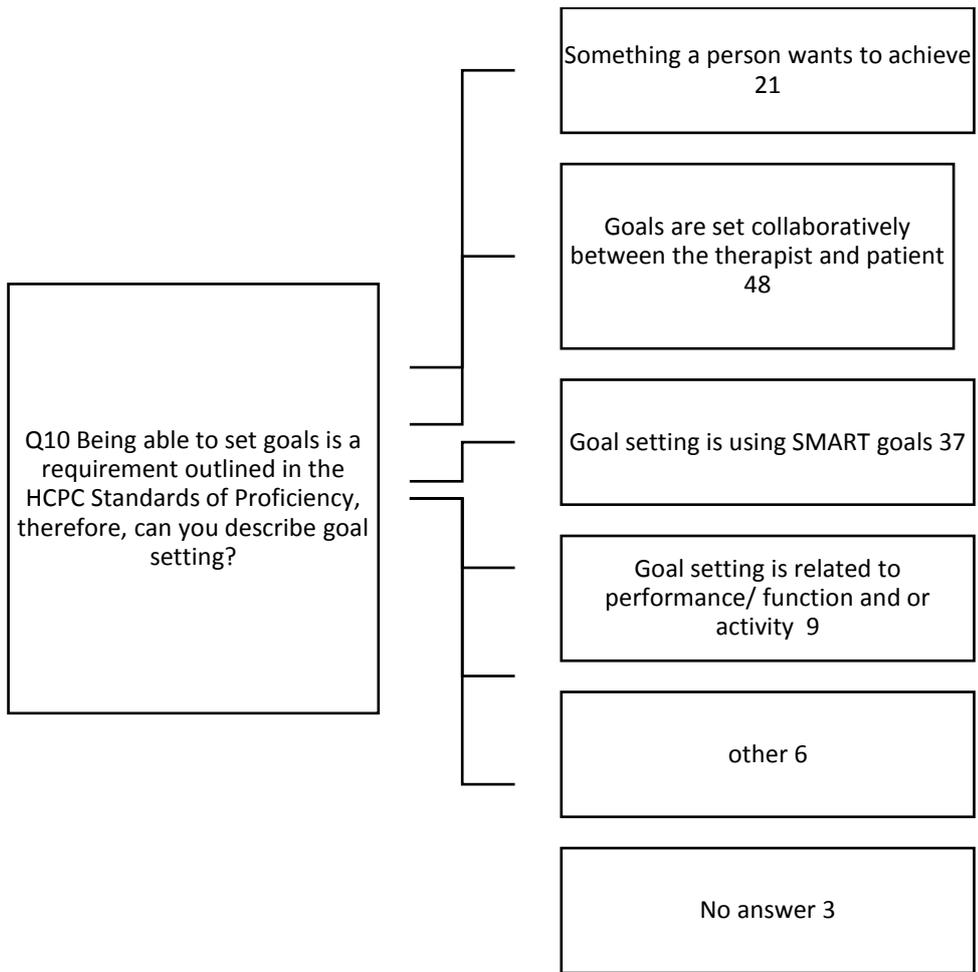
14.e How was your training delivered? (can select more than one answer)

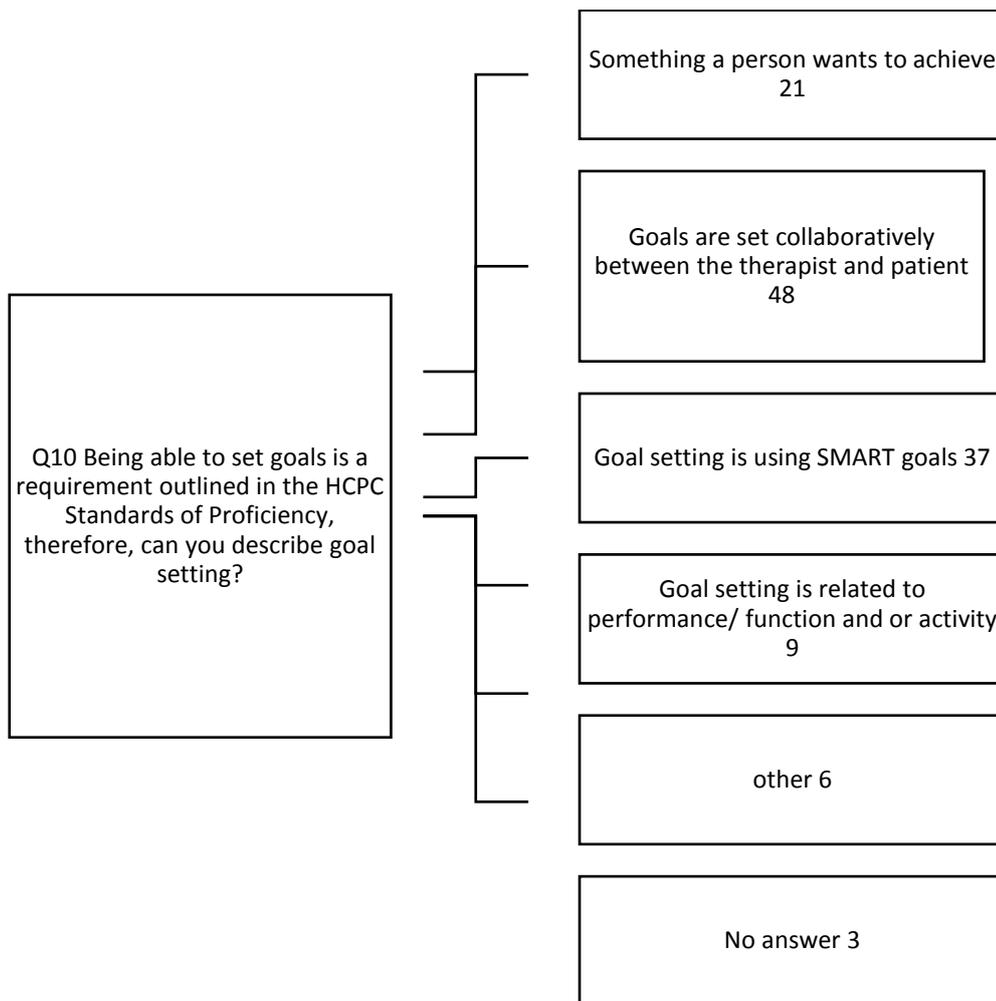


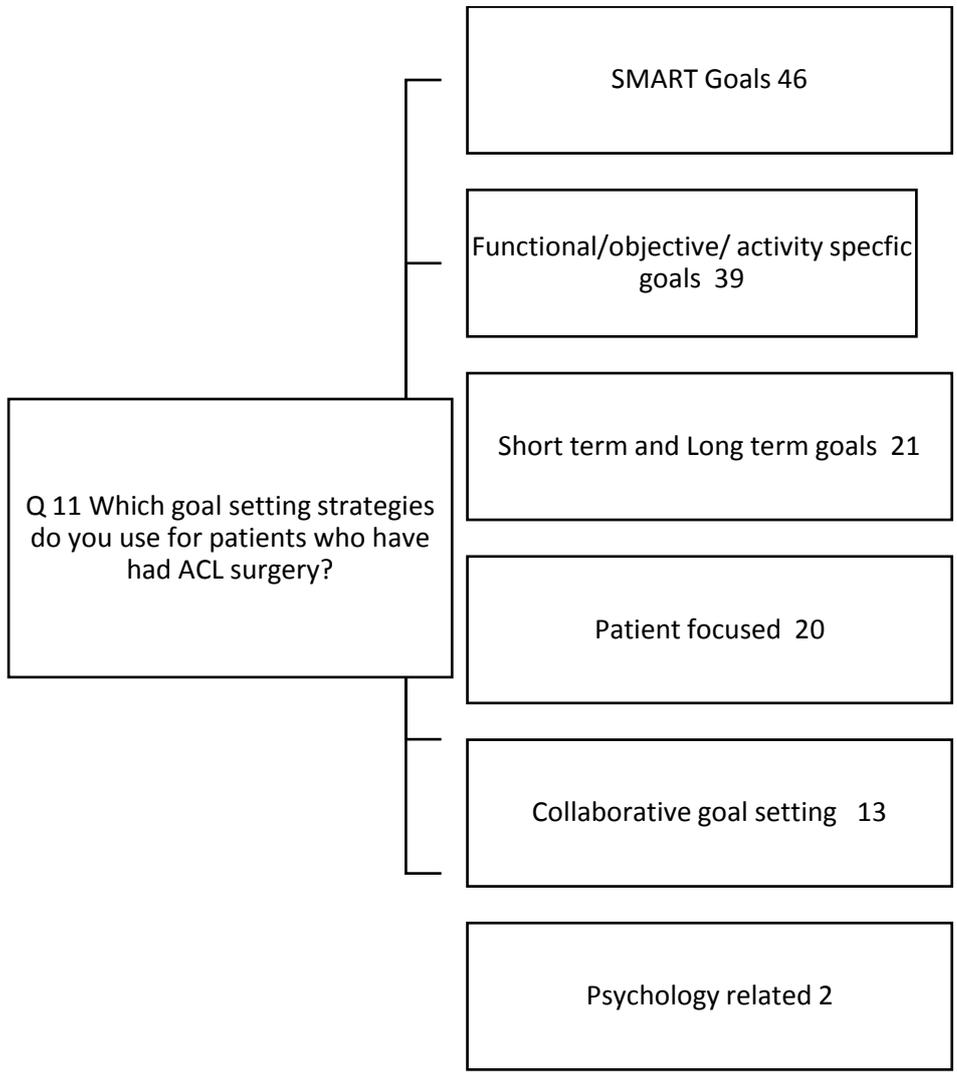
14.f Do you feel that student physiotherapists should receive more training on goal setting strategies?

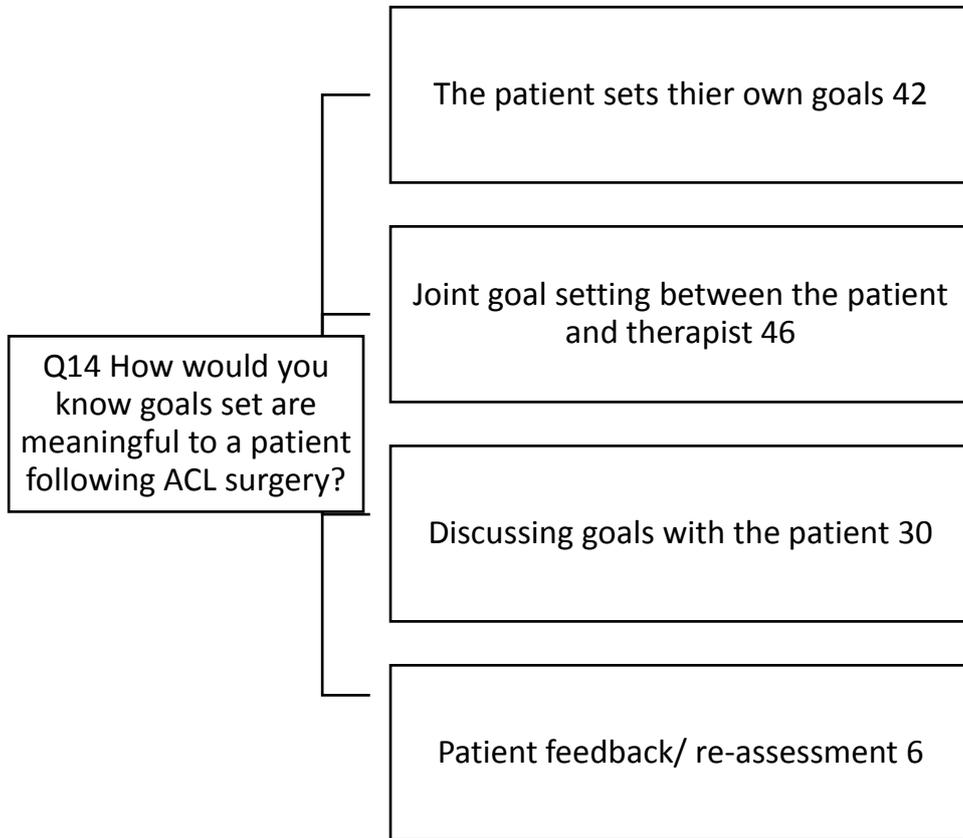


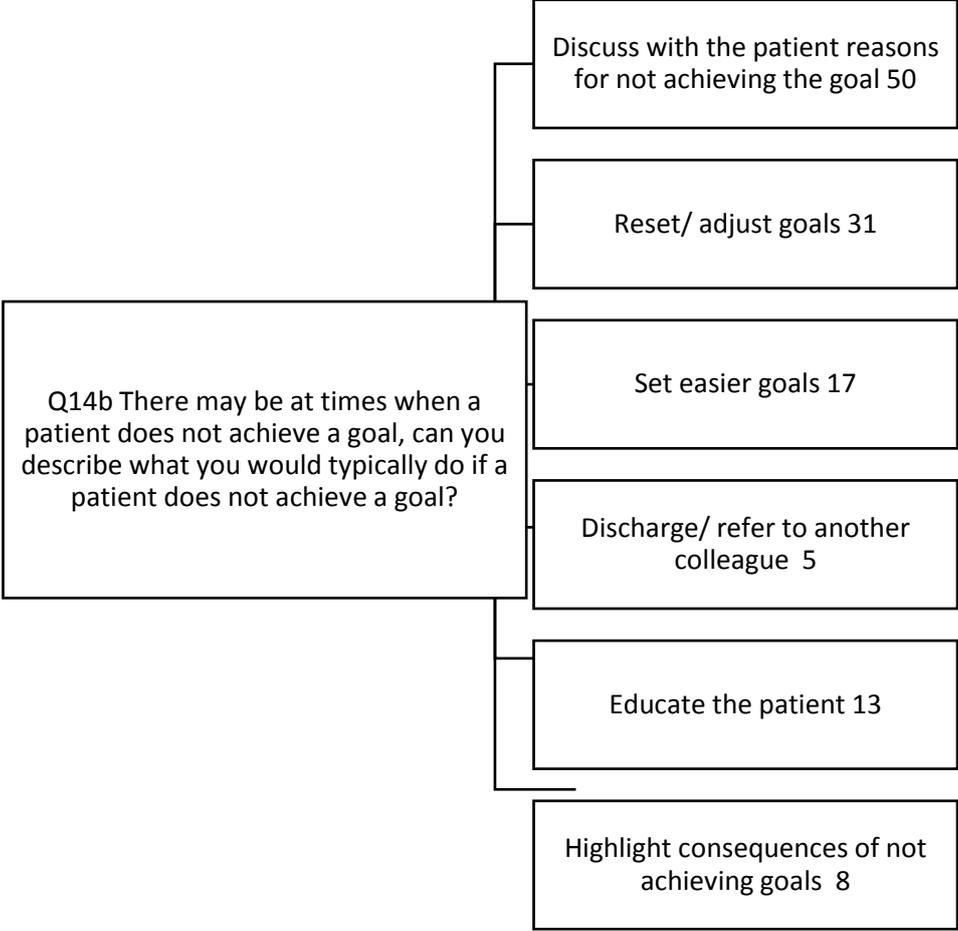
Appendix C: Supplementary tables used as part of the coding process.











Chapter 5

Physiotherapists' understanding, training and experiences of goal setting practices used in ACL rehabilitation

Documentation

Appendix D: Ethical Approval documentation

Department of Sport, Health & Exercise Science

Ethics Independent Reviewer's Report

This form should be completed by a member of the Department of Sport, Health and Exercise Science Ethics Committee who has been assigned to review a particular ethics application by the chair of the committee. The front section of the Independent's Reviewer's Report should be printed, signed and dated, and attached to the back of the reviewed ethics application. The reviewed ethics application should be given to the Ethics Committee chair once all reviews have been completed. The checklist provided at this end of this form is to help the reviewer complete the review and guide the content of his or her written report, which should be typed into the relevant boxes that are given before the checklist. Any checkbox highlighted red that has been checked requires attention.

Please note that the checklist is for guidance only and reviewers should be aware of other ethical considerations relevant to the ethics application being reviewed.

An electronic copy of the completed report should be stored on the reviewer's computer.

Independent reviewer's name	Adam Nicholls
Application title and number	1617102
Principal investigator's name	Caroline Douglas
Student investigator's name (if applicable)	Jenny Alexanders

Reviewer's recommended outcome
Approve <input checked="" type="checkbox"/> Refer <input type="checkbox"/> Revise <input type="checkbox"/> Reject <input type="checkbox"/>

Reviewers comments	
Section	Comment

Signed: *A.Nicholls*

Date: 12/12/2016

Risk Assessment Form

When used as part of a research ethics application it is the principal investigator’s responsibility to ensure that this form has been completed properly. This includes ensuring that the level of risk has been appropriately assigned, that the associated hazards are acceptable, and that all appropriate control measures have been put in place before, during, and after the testing procedure in order to **minimise each specific risk** associated with the testing procedure. Where the risk assessment is being completed as part of an undergraduate or postgraduate project, it is the student’s responsibility to complete the form, and the supervisor’s responsibility to evaluate the form and request revisions where appropriate.

1. Procedure covered 	Semi-structured one to one interviews	
2. Location covered	Face to face interviews will be covered within a 50-80 mile radius of the North Yorkshire region. Telephone interviews will be throughout the United Kingdom.	
3. Those at risk	Interviewee and Interviewer	
4. Assessor (principal investigator)	Dr Caroline Douglas	
5. Date of assessment	05/12/2016	
6. Review dates (for office use only)		

7. Hazards	8. Specific control measures	9. Risk (S x L)
The participants may become rude/aggressive/abusive and agitated	Explain Hazard: The participants may take offence to some of the questions, possibly resulting in them to become rude/aggressive/abusive and agitated Control measure: They will be reminded that responses will remain between themselves and the investigator and so have no reason to feel unstable. The interview will be terminated immediately if this proves unsuccessful.	1x2
The participant may become agitated or display signs of	Explain Hazard: Because the interview may be a time consuming process, the participant may	1x2

frustration due to the length of the interview	<p>become agitated/ frustrated and therefore may not want to carry on the interview.</p> <p>Control measure: The participant will be reminded at the start of the interview the expected duration of the interview. In addition, the participant will be given the opportunity to have a 5 minute break during the interview.</p>	
Dissatisfied due to feedback not being immediate	<p>Explain Hazard: The participant may be dissatisfied due to feedback not being immediately after the interview.</p> <p>Control measure: The participants will be reminded that the informed consent forms clearly state that they will receive feedback within 4-6 weeks</p>	1x1
Participant feeling slightly embarrassed or uncomfortable	<p>Explain Hazard: A question that will be posed may uncover some upsetting experiences that may embarrass the participant</p> <p>Control measure: The investigator will handle any sensitive situations with caution and care, and will also acknowledge any emotions that may cause any sort of pain.</p>	1x2
Coercion	<p>Explain Hazard: The participants may feel pressured or expected to take part in the study.</p> <p>Control measure: It is the participant's choice as to whether they do or do not want to take part within the study. During the consent process, participants will be advised and reminded that they can withdraw from the study at any time without any particular reason. It will also be stressed to participants both orally and within the EC2 documents that participant in this study and/or withdrawal at anytime will not be detrimental to their position as a chartered physiotherapist, nor will it further their position as a chartered physiotherapist</p>	1x2
External visits to NHS hospitals, Sports clubs and private practices	<p>Explain Hazard: Interviews will be conducted within in a hospital, private practice and a sports club environment</p> <p>Control measure: Data will only be collected in an environment that is deemed safe and secure based on a thorough check prior to the visit is scheduled.</p>	1x1
Anonymity and Confidentiality	<p>Explain Hazard: The participants involved may worry that their identity may be revealed, thus putting their data under jeopardy.</p>	1x2

	<p>Control measure: Data collected will be in accordance with legislation regarding the data protection act of 1988. Identifiable information will not be published or made available to anybody not involved in the research. Accessing the data will be limited to only the principle investigator (JA). Data that involves personal data will be removed and replaced with coding and will be stored in a secure, locked filing cabinet where only the principle investigator will have access to (JA). The material will be kept safely stored for five years before it has been destroyed appropriately.</p>	
Informed Consent	<p>Explain Hazard: provision of procedural information.</p> <p>Control measure: each participant will be provided with a participant information sheet to decide whether they would or would not like to take part within the research study. Participants will be informed about the aims, interview method, anticipated benefits, and potential hazards of the research. There will be an opportunity to raise any issues or concerns regarding the study.</p>	1x1
Travel Procedure.	<p>Explain Hazard: The student investigator may have potential issues with getting to a venue</p> <p>Control measure: The student investigator will drive with due care and attention when driving to the location of the study.</p>	1x2

10. Are controls adequate?	Yes ✓
11. Additional controls or remedial action required	No
12. General control measures	<p>Undergraduate students testing in the department's laboratories will be supervised by a staff member at all times. A first aider will be present at all times. In case of emergency contact Extension 5555.</p> <p>General Control Measures</p> <ol style="list-style-type: none"> 1. Pre-exercise medical questionnaire. Testing may only be permitted following satisfactory completion of the pre-exercise medical questionnaire whereby no contraindications to exercise or any aspect of the full testing procedure have been highlighted. 2. Informed consent form. Testing may only be permitted following the subject's informed

	<p>consent concerning all aspects of the testing procedure.</p> <p>3. Strict adherence to test protocol.</p> <p>4. Close monitoring of subject by a test administrator.</p> <p>5. Feedback and communication is maintained between the subject and the experimenter throughout the test.</p> <p>6. Termination of test if discomfort to subject is deemed excessive.</p>	
13. Emergency procedures	<p>1. Emergency first aid available on site within the department. All test administrators will have full knowledge of what action to take in an emergency, as outlined in the departmental Health and Safety Policy.</p> <p>2. Cleaning agents and equipment will be readily available to clean up any sweat, saliva, blood or vomit.</p> <p>3. In case of emergency contact Extension 5555.</p> <p>4. If any severe feeling of discomfort is signalled by the subject or seen by the administrator, then testing will be terminated and further action taken if required.</p>	
14. Monitoring procedures	<p>1. All equipment checked regularly prior to use for correct and safe functioning.</p> <p>2. Continued monitoring of procedures and equipment in case modifications can further reduce risk.</p> <p>3. Continuous monitoring of the participant during and immediately after the test procedure will occur.</p>	
	Date to be completed	On-going

15. Declaration of the principal investigator and independent reviewer

I am the principle investigator and have read this risk assessment and consider that the level of risk has been appropriately assigned, that the associated hazards are acceptable and that all appropriate control measures have been put in place before, during, and after the testing procedure in order to minimise each specific risk associated with the testing procedure.

Dr Caroline Douglas

05/12/16

C. Douglas

Name of principal investigator

Date

Signature

I am an independent reviewer who sits on the Department of Sport, Health and Exercise Ethics Committee. I have independently reviewed this risk assessment and consider that the level of risk has been appropriately assigned, that the associated hazards are acceptable and that all appropriate control measures have been put in place before, during, and after the testing procedure in order to minimise each specific risk associated with the testing procedure

Participant Letter of Invitation

Project title	Physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament Surgery
Principal investigator	Name: Dr Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482 463345
Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@2012.hull.ac.uk Contact telephone number: 07557388811

4/1/2017

Dear Sir or Madam

This is a letter of invitation to enquire if you would like to take part in a research project at the University of Hull.

Before you decide if you would like to take part it is important for you to understand why the project is being done and what it will involve. Please take time to carefully read the Participant Information Sheet on the following pages and discuss it with others if you wish. Ask me if there is anything that is not clear, or if you would like more information.

If you would like to take part please complete and return the Informed Consent Declaration form.

Please do not hesitate to contact me if you have any questions.

Yours faithfully,

Jenny Alexanders

Participant Information Sheet

Project title	Physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament Surgery
Principal investigator	Name: Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482 463345
Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@2012.hull.ac.uk Contact telephone number: 07557388811

What is the purpose of this project?

The purpose of this study is to explore physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament (ACL) Surgery.

Why have I been chosen?

You have been invited to participate in this study as you have clinical experience of working with patients following ACL surgery. Your experiences may assist researchers to better understand how goal setting is practically applied by both practitioners and patients.

What happens if I volunteer to take part in this project?

First, it is up to you to decide whether or not to take part. If you decide to take part you will be given this Participant Information Sheet to keep and asked to complete the Informed Consent Declaration at the back. You should give the Informed Consent Declaration to the investigator at the earliest opportunity. You will also have the opportunity to ask any questions you may have about the project. If you decide to take part you are still free to withdraw at any time and without needing to give a reason. Taking part in this project and/or withdrawal from it any time will not be detrimental to your position as a chartered physiotherapist, nor will it further your position as a chartered physiotherapist.

What will I have to do?

You will be contacted to arrange a convenient location and time for you to meet with the investigator. On arrival, the investigator will brief you on the procedure and will give you the opportunity to ask any questions or express any concerns that you might have. You will then be asked to read and sign a consent form. Following this, you will be interviewed individually which will be recorded electronically on a digital voice recording device. Once the interview is over, you will have the opportunity to express any views or raise any relevant points that you

may feel you were either not able to do so during the interview, or were not covered within the scope of the interview questions. The interview process should last no longer than 45 minutes.

Will I receive any financial reward or travel expenses for taking part?

No

Are there any other benefits of taking part?

As you will have the opportunity to discuss your clinical experiences regarding the use of goal setting with your patients who have undergone ACL surgery, this in turn may offer you valuable insight in to your understanding of goal setting.

Will participation involve any physical discomfort or harm?

No

Will I have to provide any bodily samples (e.g. blood or saliva)?

No

Will participation involve any embarrassment or other psychological stress?

With the interview focusing on your feelings and experiences of working with patients, this could provoke an emotional response during the interview. Although this cannot always be prevented, you can be assured that the interview will be confidential and anonymous at all times. Moreover, you are free to withdraw from study at any time without having to give a reason for doing so, if as the interview becomes too demanding.

What will happen once I have completed all that is asked of me?

You will be made aware that the interview has concluded and asked if there is anything you wish to add or clarify. You will always be reminded that you will be able to see a transcript of the interview 4-6 weeks after the interview, therefore allowing you to check for an accurate representation of the dialogue that occurred.

How will my taking part in this project be kept confidential?

Your personal details will be removed from the data and will be replaced with a code involving numbers and characters that will not be linked to your identify. Your consent form and personal details will be stored separately from your data. All paper records will be stored in a locked filing cabinet, accessible only to the research team, and all electronic information will be stored on a password-protected computer and password-protected USB memory stick. All information and data gathered during this research will be stored in line with the 1988 Data Protection Act and will be destroyed 5 years following the conclusion of the study. During that time the data may be used by members of the research team only for purposes appropriate to the research question, but at no point will your personal information or data be revealed.

How will my data be used?

Results from the study will be written up to form a chapter of a doctoral thesis, and may be published in an academic journal or paper. Should this occur, only the research team will be able to access any of the confidential information that will be collected during the process.

Who has reviewed this study?

This project has undergone full ethical scrutiny and all procedures have been risk assessed and approved by the Department of Sport, Health and Exercise Science Ethics Committee at the University of Hull.

What if I am unhappy during my participation in the project?

You are free to withdraw from the project at any time. During the study itself, if you decide that you do not wish to take any further part then please inform the person named in Section 18 and they will facilitate your withdrawal. You do not have to give a reason for your withdrawal. Any personal information or data that you have provided (both paper and electronic) will be destroyed or deleted as soon as possible after your withdrawal. After you have completed the research you can still withdraw your personal information and data by contacting the person named in Section 18. If you are concerned that regulations are being infringed, or that your interests are otherwise being ignored, neglected or denied, you should inform Dr Andrew Garrett, Chair of the Department of Sport, Health and Exercise Research Ethics Committee, who will investigate your complaint (Tel: 01482 463866; Email: a.garrett@hull.ac.uk)

How do I take part?

Contact the investigator using the contact details given below. He or she will answer any queries and explain how you can get involved.

Name: Jenny Alexanders. Email: J.Alexanders@2012.hull.ac.uk Phone: 07557388811

Informed Consent Declaration

Project title	Physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament Surgery
Principal investigator	Name: Dr Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482 463345
Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@2012.hull.ac.uk Contact telephone number: 07557388811

Please Initial

I confirm that I have read and understood all the information provided in the Informed Consent Form (EC2) relating to the above project and I have had the opportunity to ask questions.

I understand this project is designed to further scientific knowledge and that all procedures have been risk assessed and approved by the Department of Sport, Health and Exercise Science Research Ethics Committee at the University of Hull

Any questions I have about my participation in this project have been answered to my satisfaction.

I fully understand my participation is voluntary and that I am free to withdraw from this project at any time and at any stage, without giving any reason. I have read and fully understand this consent form.
I agree to take part in this project.

Name of participant	Date	Signature
Person taking consent	Date	Signature

Participant Debrief Form

1. Project title	Physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament (ACL) Surgery
2. Principal investigator	Name: Dr Caroline Douglas Email address: C.Douglas@hull.ac.uk Contact telephone number: 01482 463345
3. Student investigator (if applicable)	Name: Jenny Alexanders Email address: J.Alexanders@2012.hull.ac.uk Contact telephone number: 07557388811

4. What was the purpose of the project?

The purpose of this study is to explore physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament (ACL) Surgery.

5. How will I find out about the results?

4-6 weeks after this interview you will be sent a transcript of the conversation so you can confirm the recorded material is an accurate representation of the dialogue that occurred.

6. Will I receive any individual feedback?

No individual feedback will be available, nor will your transcript be available to any other participant. However the overall findings of the study will be available to any interested participants once the research has been completed. You will not be identifiable in any published material.

7. What will happen to the information I have provided?

Your consent forms and personal details will be stored separately from your data. All paper records will be stored in a locked filing cabinet, accessible only to the research team, and all electronic information will be stored on a password-protected computer and password-protected USB memory stick. All information and data gathered during this research will be stored in line with the 1988 Data Protection Act and will be destroyed 5 years following the conclusion of the study. During that time the data may be used by members of the research team (student investigator, Academic supervisors) only for purposes appropriate to the research question, but at no point will your personal information or data be revealed.

8. How will the results be disseminated?

Your data will make up part of a Doctoral Thesis. Your data may be published in a scientific journal or be presented at a conference. However, the data will be generalised and your own personal information and comments will not be identifiable.

9. Have I been deceived in any way during the project?

No

10. If I change my mind and wish to withdraw the information I have provided, how do I do this?

If you do change your mind, you can contact the principle investigator by phone or email to tell them about your withdrawal from the study. You do not need to give a reason for doing so.

11. What if I am unhappy about my participation in the project?

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the investigator regarding your results within the time specified in the Participant Debrief Form, then please contact Dr Andrew Garrett, Chair of the Department of Sport, Health and Exercise Ethics Committee, who will investigate your complaint (Tel: 01482 463141; Email: a.garrett@hull.ac.uk).

Appendix E Interview Guide

Interview Questions

Physiotherapists' experiences of using goal setting with patients following Anterior Cruciate Ligament Surgery

Introduction:

- Statement of purpose
- Confidentiality
- Participants rights
- Instructions

Area of work and experience working with patients following ACL surgery:

- How long have you been registered as an HCPC Physiotherapist?
- What qualification did you obtain to become a Physiotherapist? (e.g. BSc, MSc)
- Which area of physiotherapy do you currently work in? (Can you expand further on this?)
- What information do you have about the patient prior to their initial out-patient appointment? (Can you go into more detail?)
- What information do you give your patient during their initial out-patient appointment? (Can you expand further more on this?)
- What, in your experiences, are your patient's biggest concerns during ACL rehabilitation? (Can you give an example?)

Goal Setting:

- Do you use goals to assist your patients with their rehabilitation?
- At what stage do you set goals with your patient? (beginning, middle, end etc)
- How do you determine what the patient wants to get out of ACL rehabilitation? (Can you go into more detail?)
- Can you describe goal setting?
- Can you describe, in detail, how do you set goals for patients who have had ACL surgery? (Can you expand further on this?)
- How do you involve the patient in the goal setting process? (Can you expand further more on this?)
- When setting goals, are you guided by any approach or framework? (If so, where did you learn about this framework?)
- How would you know whether your patient is committed to the goal? (Can you go into more detail?)
- How valuable do you think goal setting is for patients following ACL surgery? (Why do you think that?)

- Are you aware of any other goal setting approaches or frameworks other than the approach you use? (For example Lock and Latham goal setting process, Scobbies goal setting framework, sport related goals process, performance and outcomes?)
- Have you experienced any issues with goal setting? If so, can you describe these issues? (For example time constraints, poor communication etc?)
- Can you describe what you would do if your patient does not achieve a goal?
- What do you feel are important skills and knowledge in order to set goals effectively? (Can you provide more detail?)
- Do you feel you are effective at goal setting? (If so why, if not, why not?)
- **Training, past and future:**
- Did you receive any formal training at university on goal setting? (If so, what did that consist of?)
- **If answered no to the above:** Have you undertaken any further training on goal setting? (e.g. CPD, workshops, online training etc)
- **If yes to the above:** Who taught you goal setting and were you assessed? (e.g. practical assessment, assignment etc)
- Do you think your goal setting training has been sufficient enough to prepare you for physiotherapy practice? (If yes, can you further expand, if no, can you discuss why?)
- Do you feel the psychological content of UK undergraduate physiotherapy programmes prepare students for contemporary practice? (If yes, can you further expand, if no, can you discuss why?)
- Are there any aspects of goal setting you would like further training on? (For example improving the communication between the therapist and patient, educating the patient on goal setting, using feedback etc?)
- How would you like to receive further training e.g workshop, CPD, app, handout, online etc?
- At what stage should goal setting training be introduced for physiotherapy students? (For example beginning of 1st year or following a particular module?)
- Is there anything else you would like to add about goal setting

Appendix F Phases of analysis

General Dimension	Global Themes				Structural Categorisation
Patient Management	<p style="text-align: center;">Informing the patient</p> <p>P2 Making sure you cover everything really. So normally we would discuss what they've had done, make sure they are aware of what they've had done and what their understanding is of what they've had done what the consultant has spoken to them about guidelines what they can and can't do and how long it would take in terms of rehab.</p> <p>P12 Those initial appointments really were kind of giving them information on essentially what their boundaries are really of what we really want them to be doing in those early stages and then just essentially making them aware of what they couldn't do that may hinder the integrity of the graft.</p> <p>P19 we'll go through the protocol, with them and basically give them expectations of the next year of rehab. It's mainly just verbal but if they want anything writing down then we'll write stuff down. Quite often I'll give them a copy of the protocol so that they can take that home with them.</p> <p>P22 So it generally just be a conversation based around the role of physio, and what they're going to do, participate in rehab and I kind of go through that process of initial assessment, and then going through the kind of basic exercises first of all.</p>	<p style="text-align: center;">Managing expectations/ concerns</p> <p>P13 I just tend to clarify with them as to their understanding of what's been done and what they're supposed to be doing now and then they're expectations of how long that rehab is going to take.</p> <p>P8 So I think that initial one is very much a finding out what their expectations are, so I think they're although they're told pre-operatively that there's going to be a long post-op recovery time, my experience has been that lots of the athletes think that they can speed up their recovery and therefore they're going to be back to things much quicker, so any timescales that they've been given preoperatively seem to have gone out of their head so I spend quite a bit of time talking through the different stages of the rehab.</p> <p>P22 I think a lot of it's about managing their concerns and that is the time returning to activities.</p> <p>P17 I think trying to address their concerns of returning to sport I think is for a real key for a lot of them.</p> <p>P2 I think dealing with patients concerns for example patients concerns of re, re-ruptures of the knee and getting back to sport.</p>	<p style="text-align: center;">Involving the patient</p> <p>P1 my ethos is about the more I can involve them, the more motivated and more don't like to use the words compliance adherence, but the more they actually you know are involved in the treatment, the more successful it is. I guess</p> <p>P4 I involve them is getting them to set their own goals and asking them where they want to be, so they tell me what they want to get back to and then from there I suppose I probably come in a bit more and say how we're going to achieve that.</p> <p>P14 I usually get them to choose what goals they want to do. And try it because yeah try and get them to choose what they want to do So yeah I tend to get them to talk through what they would like to do and then I try and say well from my perspective this is what you need to be able to do to meet that particular goal that you want to achieve.</p> <p>P15 I get them to write their goals down like a training diary and maybe come back I'll get them to almost break it down in the first sort of month to three months.</p>	<p style="text-align: center;">Patient buy in</p> <p>P5 It would be a case of once you've set the goal, you can generally judge from them how committed they are to the session itself and to the process going forward.</p> <p>P7 I go by how they react to the information they are given and the assessment and whether they actually do the stuff.</p> <p>P14 I usually find I can tell whether patients are bought in to their rehab due to how engaged they are during the assessment.</p> <p>P1 A lot of the time patients are often committed due to the way I set things, I find my patients come back to me time and time again.</p>	Communication

General Dimension	Global Themes			Structural Categorisation
<p>Goal setting</p>	<p>Goal setting approach</p> <p>P2 Obviously your SMART measurable like an ongoing process reviewing It all of the time having short term that eventually leads to long term .</p> <p>P1 Yeah they are SMART because we have to look at specific goals, so at the end of the day If patient X wants to return to football we have to make that by looking a realistic timeframe.</p> <p>P4 I feel when I have used SMART goals you know exactly what you're going to be doing to achieve what you want to achieve, so like I say, well defined goals are beneficial, really beneficial when it comes to rehab and development.</p> <p>P12 There's the standard goal setting, when I say standard it's is the SMART goals. So that seems to be the standard framework.</p> <p>P7 I tend to go with long and short term</p> <p>P17 I use the term short and long term goals, but it's not a list I make at the beginning of the treatment, the short term goals develop as we go through a treatment.</p> <p>P10 Before I worked in professional sport, I'd never heard of needs analysis we use that needs analysis as a different way of looking at Its not just you've got certain tests you need to perform. Its I've got fear of or hypervigilant response to activity and fearful of pain with that activity so</p>	<p>Process of action planning</p> <p>P1 So in order for us to go through setting goals, we discuss between us how we are going to break that down into smaller achievable components.</p> <p>P3 The whole process of setting goals is discussing the goals in relation to the protocol that they should be following and then discussing the timeframes with the patient.</p> <p>P7 I say I tell the patient what I have found objectively and then I talk to them about it, I then suggest the short term goals.</p> <p>P14 So I might talk to them about whatever the goal is that we've discussed and then I will break it down into smaller elements.</p> <p>P8 So the goal setting process involves me setting that that first goal for within the first two weeks and then as they're then moving up through, so up to month one and then the next one would be from month one to month three and then the goal to then prepare for running.</p>	<p>Goal attainment</p> <p>P9 As a professional you would look back at a goal and their might be something that you'd want to discuss with the patient. Getting their opinion on it and again that can inform your decision on how to set the goals going forward</p> <p>P17 So I always re-assess and if the goals are not going to be attainable, I would adjust them and explain it to the patient.</p> <p>P12 What I tend to do is to then ask the patient a little bit more about how they are working towards their goal because it's really trying to get into the nuts and bolts of these are the types of things you should be doing</p> <p>P19 trying to address any issues by reassessing the patient and change the goal if need be.</p> <p>P20 firstly I think assess from them and get them to reflect on how they think they're progressing. I would often change the goal to make it achievable.</p>	<p>Knowledge</p>

how can we modify approach as well, so it doesn't always have to be task orientated.			
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General Dimension	Global Themes				Structural Categorisation
<p>Training</p>	<p>Perceived skills</p> <p>P1 I think, first and foremost having really good communication skills are key when setting goals</p> <p>P2 It's good to have like good at communication skills really and be able to listen to the patient of what they want to be able to achieve.</p> <p>P3 I think the communication with the patient, because it helps in explaining why you're needing to set the goals and the importance of trying to stick to the goals.</p> <p>P4 I think communication is huge, because it doesn't matter how good your goals are, if you've not communicated with your patient then there's not any point having the goals.</p> <p>P15 Yeah I think certainly that with the ACLs its not just, I think it's not just that objective bit of assessing them what their function is, but it's very much having that clinical knowledge of psychological, physiological and psychosocial.</p>	<p>Basic Training</p> <p>P1 It was more, what we tended to do at goal setting I suppose in terms of our long and short term goal</p> <p>P10 No there was as discussion in the short, medium and long term, but in the university setting in the lecture hall setting or a lab based session,</p> <p>P23 Yeah, I think I would be lying if I said I could remember but I think we covered long and short term goals</p> <p>P5 we also looked at short, medium and long term goals so we did do a we did do a little bit in the first year and then obviously it was about applying it to your placements, your academic placements</p> <p>P15 I thought about this a while ago, I can't think specifically that</p>	<p>SMART</p> <p>P14 I think we did some brief stuff on SMART goals. But I think it was more related to how we were how we were learning with minimal link to practice.</p> <p>P19 I remember a lecture on it, because I remember the smart goals, but that was it really so it must be something I've learned.</p> <p>P20 I don't remember getting any training on formal goal setting, it may well have been there and I think I vaguely remember SMART being mentioned and that's my memory but I don't remember getting much, if any.</p> <p>P21 It's a while back now, possibly, I mean I think I do remember the smart side of things, I think we did actually go</p>	<p>Clinical Placement</p> <p>P7 of output, so my memory, I was taught it clinically as a change as we went doing things to patients being patient centred, that's my memory.</p> <p>P9 Yeah. Yeah undergrad we did goal setting. I don't not I think it was much, so when you're on your placement I think we did some more.</p> <p>P11 We didn't really do it where I would say yes I felt confident to reel off a number of different ways of doing it I do remember one of my clinical educators going through goal setting with me</p> <p>P18 If I did I genially can't remember it. I don't think so, I think I received training on goals from my educator when I was in out on my first placement'</p>	<p>Training</p>

	P23 I think they should have an anatomical understanding of what the procedure involves Physiological awareness in terms of healing time scales etc probably a biomechanical understanding	we did you know I think we might have had one session on goal setting but I can't remember	down that route and I believe it changed to smarter.		
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General Dimension	Global Themes				Structural Categorisation
Training needs	<p>Theory of goal setting</p> <p>P10 I think it would actually be worth doing a proper goal setting course cos I've never done one Information on this is the theory to support goals, this is how you structure a goal setting plan to see if what I am doing fits with that, or I've got it completely wrong</p> <p>P12 I think getting a greater theoretical understanding of it really, obviously if you've got a much more, well if you've got a greater understanding about the theory that underpins something then you've got a greater opportunity to use that correctly and understand the benefits of it.</p> <p>P11 I think... I think it would be nice to have a little bit more theory on goal setting I suppose because it's kind of something I could find useful to have more of a formal knowledge of the theory.</p>	<p>Alternative approaches</p> <p>P8 Yeah I'd love to know some of the newer approaches, or the other you know they might not be newer I'm just not aware of them. Yeah I'd love to know some of that and see whether it would be something that I'd look to incorporate, adapt, or swap across to, absolutely.</p> <p>P15 So when I think I first goals I think of the SMART acronym, so I think it would be good to look at other approaches, I think certainly taking on board it's not something I've probably thought of to be honest, but coming across the interview be useful to learn other approaches</p> <p>P16 Yeah of course yeah. I mean just a different approach to, ...Different ways to setting goals.</p>	<p>Setting goals</p> <p>P2 Potentially yeah, cos I don't know too much about how to set goals, so I guess it's a good thing to look at how to actually structure and set goals.</p> <p>P5 Yeah as I say it would be how to actually apply it for me than applying SMART goals rather than sort of going right this is a SMART goal, this is how we set it out and this is how we do it for patient x who has one condition.</p> <p>P4 I would like advice on how to set goals but also like it's going to be continued because I'm sure there's always going to be aspects of my goal setting application where I can improve.</p>	<p>Preferred method of delivery</p> <p>P2 I think it's gotta be a workshop, cos I am very much a practical person so I need to do that by repeating and like looking at the different scenarios where I could place that on the patient really rather than just online training or like a module so.</p> <p>P10 I am quite a practical person, I'd like to see something to fully understand and to appreciate I could do a webinar and then go on a workshop for instance, because maybe doing a webinar would give me that of a skeleton framework and going to the workshop thrash it out. That for me is a probably good way to go</p> <p>P22 I think ideal, in terms of actually timing when I would be able to put it in, I feel like an online workshop where you actually have to feed it into, into it rather than</p>	<p>Future Recommendations</p>

				<p>just listening to somebody or just reading type of thing.</p> <p>P7 So I quite like that interaction in that real life workshop type stuff rather than a big Lecture</p>	
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First Draft of Thematic Map

General Dimensions, Global Themes and Structural Categories Resulting From the Analysis of the Goal Setting -Focused Interviews

General Dimensions	Themes	Structural category location
Patient Management	Rehab process	
	Clinical knowledge	
	Patient expectations	
	Involving the patient	
	Patient concerns	
Patient buy in	Re-assessment	Communication
	Implementation of goals	
	Patient behaviour	
Goal setting	Process of setting goals	
	Developing an action plan	
	Goal setting approaches	Experience
Goal striving/ attainment	Goal evaluation	
	Patient discussion	

**General Dimensions, Global Themes and Structural Categories Resulting From the
Analysis of the Goal Setting Interviews**

**General Dimensions
location**

Themes

Structural category

Training

Perceived skills

Knowledge

Basic training

SMART

Clinical placement

Training needs

Theory of goals

Alternative approaches

Future

Recommendations

Setting goals

Methods of training delivery

Revised Thematic Map (post Peer Debriefing)

General Dimensions, Global Themes and Structural Categories Resulting From the Analysis of the Goal Setting -Focused Interviews

General Dimensions location	Themes	Structural category
Patient Management	Informing the patient	} Communication
	Patient expectations/ concerns	
	Involving the patient	
	Patient buy in	
Goal Setting	Goal setting approach	} Knowledge
	Process of action planning	
	Goal attainment	
Training	Perceived skills	} Training
	Basic training	
	SMART	
	Clinical placement	
Training needs	Theory of goals	} Future Recommendations
	Alternative approaches	
	Setting goals	
	Method of delivery	