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EXPERIENCES AND PERSPECTIVES OF SELF-MANAGEMENT FOR LOW BACK PAIN IN CLINICAL PRACTICE; IMPLICATIONS FOR SUPPORT AND EDUCATION

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EXPERIENCES AND PERSPECTIVES OF SELF-MANAGEMENT FOR LOW BACK PAIN IN CLINICAL PRACTICE; IMPLICATIONS FOR SUPPORT AND EDUCATION

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Abstract

Pain is multidimensional and self-management is advocated to manage the biopsychosocial impact of this on individuals' lives. Thus, these individuals' perspectives regarding self-management have been explored. This study aimed to firstly explore how self-management was understood in the context of low back pain through the experiences of people living with low back pain and physiotherapists'. This then led to informing the development of an education programme for physiotherapists to support self-management. The study used a mixed method approach, which involved three phases being carried out over a period of time with each informing the subsequent phase. Phase 1, a qualitative synthesis examined primary qualitative research focusing on people living with low back pain and physiotherapist experiences of self-management of low back pain. The synthesis informed phase 2, two qualitative studies addressing areas of paucity found within the literature. The final phase, a feasibility study involved the development of an education programme for physiotherapists who completed pre and post outcome measures. Focus groups were also used in evaluating the intervention. The qualitative synthesis revealed a limited amount of literature regarding physiotherapists' views and experiences of self-management of low back pain. A large proportion of studies that related to physiotherapy focusing on people living with low back pain experiences of self-management concentrated on strategies, in particular exercise with limited relation of this to daily life. The primary qualitative studies highlighted some difficulties physiotherapists faced when supporting the management of the biopsychosocial impact of LBP. Further, at times self-management could be used as a last resort. In relation to this, half of the people interviewed living with low back pain found this to be restricting their daily activities and were fearful and concerned regarding worsening pain in the future. These findings suggested people were not managing the biopsychosocial impact of low back pain and physiotherapists at times viewed influences on the pain experience as separate rather than integrated. Pain neurophysiology education linked to clinical practice was used to demonstrate the integrated nature of the pain experience, be relevant to physiotherapists and ultimately facilitate biopsychosocial self-management through enhancing understanding of the multidimensional nature of pain. Collectively, this thesis has developed understanding of self-management from the physiotherapist perspective, illuminating the support required for physiotherapists and revealed physiotherapists value pain neurophysiology education linked to practice however further support is required to implement this in clinical practice.

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Declaration

I declare that the work contained within this thesis has not been submitted for any other award and that it is all my own work. I also confirm that all opinions, ideas and contributions from the work of authors are fully acknowledged within this thesis.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the School Ethics Committee and National Research Ethics Service (NRES) on the 19/01/2012 and 13/06/2012 respectively.

I declare the word count of this thesis is 65536

Name: Jenni Monaghan

Signature:

Date: 01/05/2015

Preface

My personal experience as a physiotherapist played a key role in the development of this thesis. I worked frequently with people living with low back pain (LBP) and was interested to explore what happened to people with LBP following physiotherapy and if physiotherapy had impacted their lives in terms of living with pain and managing pain. As I gained more experience the complexity of pain became apparent and the challenges people can face living with pain. After often documenting in patient notes something to the effect of ‘discharged, self-managing LBP’, this triggered a need to explore if ‘self-managing’ was actually the case, and what in fact, it was viewed to be. To do this I would need to hear the stories and experiences of people living with LBP.

Physiotherapists work frequently with people living with LBP and are encouraged within guidelines and literature to facilitate self-management. When considering and proposing this study it became clear the ambiguity surrounding defining self-management and a lack of consensus on what this was. These ambiguities regarding self-management and the complexity of pain pose a potential challenge for physiotherapists, one in which I proposed to explore from the physiotherapist perspective.

I wanted to dedicate my professional career to providing the best possible evidence based practice to people with LBP. Therefore I embarked upon a PhD as a physiotherapist and this thesis is dedicated to the stories of the stakeholders involved and my personal quest to develop and facilitate an understanding of self-management in order to provide the best possible evidence to inform my practice.

Chapter 1

1. Introduction

1.1 The Impact of Low Back Pain

LBP has a significant impact on people's lives, their family, work and healthcare (Hoy *et al.* 2010). LBP can greatly influence people's daily life, activities, emotions, work and relationships (De Souza & Frank, 2011; Crowe *et al.* 2010b; Corbett, Foster & Nio Ong, 2007). Globally, LBP is a common problem and is expected to increase over the next few decades due to our aging population (Hoy *et al.* 2012). It can affect any age group, however is reported to be most prevalent among females in the age group of 40-80 years (Hoy *et al.* 2012). It is well reported that LBP can fluctuate in severity, and have recurrences or episodes (Dunn, Jordan & Croft, 2006). LBP is increasingly being regarded as a long term recurrent condition and episodes should not be viewed discretely as they may often be related (Dunn *et al.* 2013).

LBP is reported to be the most common musculoskeletal complaint (Deyo *et al.* 2009) that the majority of people will experience in their lifetime (Hoy *et al.* 2010) thus is an extremely frequent reason for seeking healthcare support (May, 2010). Perhaps not surprisingly, the impact and the cost of LBP are high (Manadaks & Gray, 2000). The impact of LBP on physiotherapy services sees 1.6 million visits per annum at an estimated cost of £150.7 million annually for NHS visits, with this increasing to £251.2 million when including private physiotherapy (Manadaks & Gray, 2000). Clinicians face a challenge with regards to a large range of treatment options available for LBP (Pransky *et al.* 2010). However many treatments have not demonstrated long term consistent benefits (Foster, 2011). Self-management and support are often encouraged for LBP (Balague *et al.* 2012).

LBP is frequently managed within primary care and physiotherapists will often work with people living with LBP and can influence how people manage their LBP (Foster, Hill & Hay, 2011; Moffett, 2002). It is understood that people living with LBP may require a multidisciplinary rehabilitation (Kamper *et al.* 2015). However it is felt important to focus on the context of physiotherapy due to this profession frequently working with people living with LBP. Multidisciplinary management may not be realistic in practice and as discussed many people consult physiotherapists; a sole physiotherapy intervention of education improved peoples' management of their LBP (Moseley, 2002). LBP is a complex phenomenon often understood in relation to the biopsychosocial model, which is used currently both within research and clinical practice (Campbell *et al.* 2013). Physical and psychosocial relationships are interdependent of one another (Foster & Delitto, 2011). It is necessary to provide a brief overview of the development of the understanding of pain to contextualise the biopsychosocial model and LBP.

1.2 The Multidimensional Nature of Pain

The last fifty years has seen an influx of research regarding pain science and great advances and development in understanding of this complex area (Melzack, 2014). Certainly, the understanding of pain and its mechanisms has been taken forward dramatically recently, with important developments made in less than the last ten years (McMahon, 2013). The physiotherapist role has also developed within pain management during this time (Sluka, 2009). Within the physiotherapy profession there have been significant advancements in the knowledge of pain science and education as relates to practice (Ryan, 2015).

There have been many theories with regards to pain. In 1640 a philosopher, Descartes, postulated that pain is transmitted from the skin to what he termed the pineal gland in the brain; the mind being a passive recipient of information; signifying a dualistic view (Wall, 2000). This early theory of pain, termed 'specificity theory' proposed there to be a pain centre in the brain which received information from pain receptors in the skin (Melzack & Wall, 1996). This view dominated understanding of pain for many years and although built upon in the 19th and 20th century with understanding of receptors and affective roles, the mind and body split remained (Melzack & Wall, 1996). The biomedical model underpinned by the dualism view, which split the mind and body is inadequate to explain the wider influences on a pain experience (Gatchel *et al.* 2007). Pain erroneously is frequently used as the simplest illustration of a physical stimulus eliciting a mental response (Wall, 2000). However, pain is not simplistic and is not a direct reflection of what is happening within tissues (Moseley, 2003a). Pain perception is influenced by various psychological factors (Melzack & Wall, 1996). Alongside this, changes within the nervous system itself through peripheral and central sensitisation may contribute to maintaining pain experience (van Griensven, 2014).

It is important that nociception and pain is distinguished, the former involves transmission of information from nervous tissue to communicate to the brain about potential damage to tissue (Gatchel *et al.* 2007). Pain however is a subjective experience; sensory information is modulated and influenced by learning, neuro-physiological changes, genetics, social and psychological status (Gatchel *et al.* 2007). Thus, pain is multidimensional, influenced by multiple factors, which include sensory, emotional and cognitive dimensions (Melzack, 1999). Emotion and cognition are related to psychosocial factors, with cognitions attaching meaning to the emotional experiences, subsequently causing further emotional reactions which can magnify a pain experience hence the development of a cycle of distress and disability can occur (Gatchel *et al.* 2007). The integrated nature of pain is eloquently portrayed by Flor and Turk (2005, p.242) terming the physiological and psychological aspects of the experience as ‘intricately interwoven’.

In 1965 the gate control theory was developed which was pivotal in illustrating the influence of spinal and brain mechanisms and the integrated nature of psychological aspects on pain (Melzack, 1999). Further, this was the original theory that suggested the role of psychological factors as modulators of the pain experience. This was later developed by the same proponents into the neuromatrix theory, which recognises the sensory, cognitive and emotional dimensions that contribute to a pain experience. This theory proposes that a pain experience is produced by a widely distributed brain neural network termed the body-self neuromatrix, unique to the individual (Melzack, 2001). This model is proposed and adapted by Moseley (2007) as a clinically relevant model demonstrating the factors physiotherapists may hear in the clinic and how these can influence a person's pain experience. A significant factor is the recognition that pain is not simply a direct response to sensory input following tissue damage, nor is there a 'pain centre' in the brain, it is a multi-system output produced by various cortical areas (Moseley, 2003a). There is increasing neurophysiological evidence regarding the multiple influences on the perception of pain in the brain and increasing use of brain imaging to identify areas of the brain involved in a pain experience and how this differs among individuals (Tracey & Mantyh, 2007; Apkarian *et al.* 2005). The neuromatrix has been suggested as the theoretical underpinning of the biopsychosocial model of chronic pain (Gatchel *et al.* 2007).

In relation to LBP the need for a biopsychosocial model and approach is recognised to consider the influence on pain and disability encompassing the physical, psychological and social influences (Waddell, 1987). Thus, this multidimensional experience of pain, with psychological and social factors, as well as biological factors contributing to the experience is conceptualised by this model (Vancleef *et al.* 2012). The biopsychosocial model acknowledges that pain cannot be separated into solely physical or psychosocial aspects; pain involves an interaction between these factors (Sluka, 2009). This multidimensional experience sees varying disability and suffering among individuals, showing the influence of social and psychological factors not solely biological (Vancleef *et al.* 2012). Thus the biopsychosocial model represents the pain experience considering each of these factors (Waddell, 2004). All of these factors need to be considered when someone is experiencing pain and the mind and body relationship (Sluka, 2009; Main & Spanswick, 2000). Beliefs, emotional impact and past experience each influence response to pain (Main *et al.* 2010). The multidimensional nature of pain conceptualsied by the biopsychosocial model will form an important theoretical basis for this thesis.

The biopyschosocial model of pain focuses on the management of chronic pain and it is often applied to LBP (Waddell, 2004). Both research and clinical practice accept this model for LBP (Campbell *et al.* 2013). Physiotherapists are viewed as being in an ideal position to work with a biopsychosocial manner in the management of LBP (Foster & Delitto, 2010). Psychological and social factors can maintain and exacerbate a pain experience (Asmundson *et al.* 2014) and have been proposed to influence chronic LBP development more so than physical factors (Wertli *et al.* 2014a; Waddell, 2004).

Such psychosocial barriers have been found to include fear of movement, catastrophising, poor perceptions of control and pain related distress and concerns for the future; each of which physiotherapy management has the potential to modify (Foster & Delitto, 2010). As discussed, alongside sensory factors, there are cognitive and emotional influences on a pain experience, with emotion interacting with cognitive factors and producing beliefs, which can strongly impact a pain experience, namely fear avoidance and catastrophising and self-efficacy (Main, Foster & Buchbinder, 2010; Gatchel *et al.* 2007).

There are multiple fears people may have regarding their pain; these include a direct fear of pain, fear of injuring themselves, fear of movement or fear of work activities (Leeuw *et al.* 2007). The fear avoidance model illustrates why some people may develop disability and others may not, and is concerned with two potential pathways, either viewing pain as non threatening and continuing engagement, or having threatening or catastrophising thoughts in relation to pain leading to fear and avoidance (Vlaeyen & Linton, 2000). People become less engaged in activity, have increased disability, experience further pain and thus a cycle continues driven by fear (Asmundson *et al.* 2014). The influence of addressing fear avoidance beliefs was investigated by Wertli *et al.* (2014a). Their systematic review included seventeen randomized controlled trails, with strong evidence for a high fear avoidance belief associated with increased disability. Further, interventions that aimed to address these beliefs were more effective than those focused on biomedical management in populations with LBP of less than six months.

The influence of fear avoidance beliefs with regards to outcome has been investigated in a recent systematic review by Wertli *et al.* (2014b). Twenty one cohort studies with a minimum of three month follow up and 100 participants were included. Fear avoidance beliefs were associated with poor work outcomes in the sub acute stage of LBP. This review focused on the Fear Avoidance Beliefs Questionnaire and Tampa Scale of Kineisophobia, and although widely used the study recognises the potential limitation to generalisability through only investigating these two scales. Subjective interview can further elicit people's cognitions related to fear and further understand the role and impact of this (Vancleef *et al.* 2012). A qualitative study conducted with eleven individuals living with LBP provided insights into the effect of fear of movement and the impact of this on daily life (Ashby, Richards & James, 2010). Participants were recruited following a work fitness programme, and were all male participants, which is noted as a limitation to transferability. LBP was found to affect all aspects of people's lives including social, relationships, employment and loss of roles (Ashby, Richards & James, 2010). Further, these incorrect beliefs regarding pain contributed to fear and recognition of these within clinical practice is warranted. Thus, this factor may influence not only work prognosis, but also wider aspects of daily life as subjectively reported.

An important concept to consider in relation to LBP is that of control (Main & Waddell, 2004). The belief that an individual can influence their pain, for example the unpleasantness or intensity of their pain is termed control; with an individual having control over pain on the their life not solely pain intensity being of importance (Gatchel *et al.* 2007). Thus, control involves confidence in the individual's ability to influence pain and daily life (Main & Waddell, 2004). The perceived control of a problem shares an association with self-efficacy (Gatchel *et al.* 2007). Self-efficacy is important when considering the response to pain. Self-efficacy is the perceived ability or belief of an individual that they are able to successfully perform a particular task to achieve an outcome, with stronger perceived self-efficacy increasing the effort to achieve this (Bandura, 1977). Self-efficacy related to expectations of recovery has been found to be a prognostic factor that can strongly predict disability and pain outcomes in musculoskeletal pain populations (Laisne, Lecomte & Corbiere, 2012).

Foster *et al.* (2010) criticise current studies focusing on the role of modifiable psychological barriers in isolation and conducted a cohort study utilising questionnaires regarding psychological factors proposed to be risk factors for poor prognosis. 1591 people who had consulted their general practitioner for LBP completed initial questionnaires covering fear avoidance, illness perceptions, anxiety and depression and self-efficacy beliefs. The representative nature of this population is highlighted due to people experiencing LBP frequently encountering their general practitioner. Four out of twenty psychological obstacles to recovery were found to be most predictive of disability at 6 months. Whilst fear avoidance and catastophising showed significance, there were four stronger predictors of outcome which included perceptions that LBP will last into the future, demonstrating low confidence in ability to perform usual activities despite pain, that symptoms experience are related to their back problem and beliefs of lack of personal control over LBP. This may link to avoidance of specific activities (Foster *et al.* 2010). Campbell *et al.* (2013) further examined this cohort at five years, again, the majority of the psychological variables predicted LBP status, however a lower pain self-efficacy and beliefs of pain lasting a long time were the strongest predictors. Thus modification of these beliefs, which can be achieved in clinical practice is warranted (Campbell *et al.* 2013).

Self-efficacy is often discussed in relation to self-management as self-efficacy involves the person demonstrating confidence in their capability to do a particular activity or to make a change (Battersby, Lawn and Pols, 2010; Lorig, Halsted and Holman, 2003). Self-efficacy is important to consider when advocating self-management of chronic musculoskeletal pain (Miles *et al.* 2011). Miles *et al.* (2011) carried out a sub group analysis, of which three studies, classed as strong evidence were included, one of which was chronic LBP. Regardless of the intervention depression and self-efficacy were found to predict outcome. People who have a weak belief in their own ability to control their back problem and feel their pain will persist have been shown to have poorer outcomes clinically; people need to feel confident in themselves to manage LBP (Foster *et al.* 2010). Given the potential for LBP to be long term and recurrent, treatments showing limited efficacy and self-management being advocated, the latter warrants further investigation.

1.3 Contemporary Understanding of Self-Management

Self-management can be considered in relation to the biopsychosocial model, recognising the interacting components of a health condition (Battersby, Lawn & Pols, 2010). Self-management is a topical area to explore in relation to chronic and recurrent LBP with self-management being advocated in numerous guidelines (National Institute for Clinical Excellence, 2009; British Society for Rheumatology and IASP Musculoskeletal Taskforce, 2008; Bekkering *et al.* 2003).

When self-management of LBP is discussed within guidelines, the provision of education and advice is recommended however at times the detail and guidance for professionals regarding the content of this education and advice is limited (National Institute for Clinical Excellence, 2009; GB. DoH. 2006) thus giving healthcare professionals no clear guidance (Cameron & Stewart, 2011). In relation to this, it is well recognised within the literature that self-management is a complex phenomenon which can be difficult to define and thus there is no single understanding (Stewart *et al.* 2014; Kendall *et al.* 2011; Cameron & Stewart, 2011; Miles *et al.* 2011; Barlow *et al.* 2002). Consequently, if self-management is to be advocated for people living with LBP, this needs to be understood within this context.

A well recognised course in relation to self-management is The Stanford Courses (Lawn & Schoo, 2010) These models have contributed to the development and understanding of self-management in relation to chronic disease, with a key goal of this approach being enhancing self-efficacy (Battersby, Lawn & Pols, 2010; Haas *et al.* 2005). There are some skills specifically associated with self-management in relation to the Stanford Model in order to allow the person to take responsibility day to day for their condition (Lorig, Halsted & Holman, 2003). Lorig (2003) argues that self-management education differs to patient education as there are specific skills associated with the former. Due to this, there are some generic skills that are often related to self-management. Gaining support and forming a partnership with healthcare professionals is included as a skill due to the fluctuating nature of chronic conditions (Newman, Mulligan and Steed, 2004; Lorig, Halsted and Holman, 2003). Alongside this, the ability to problem solve is viewed as important and key to self-management education as well as being able to make decisions through support and understanding of the condition (Lorig, Halsted & Holman, 2003; Bodenheimer *et al.* 2002). Setting action plans and goal setting can be used to facilitate this (Newman, Steed & Mulligan, 2004; Lorig, Halsted & Holman, 2003; Bodenhiemer, 2002). Considering how thoughts influence behaviour features within self-management interventions with the overall aim being the patient to take control of their condition (Newman, Steed & Mulligan, 2004). It is interesting to note, Lorig, Halsted and Holman (2003, p.6) state healthcare professionals must say to patients “I want you to learn about your disease and its management”. This creates a paradox in that it does not appear to be a partnership or joint decision as advocated.

The understanding of self-management is not restricted to the Stanford Model and it has multiple interpretations within the literature. Currently there are various definitions of self-management, which can be generic and apply to a range of conditions rather than being specific to pain (Cameron & Stewart, 2011). Figure 1.1 displays some definitions of self-management within the literature. Boyers *et al.* (2012) and Stewart *et al.* (2014) are definitions specifically focusing on pain; whereas the other definitions are generic and often focused on chronic disease management. There are common themes apparent among the definitions with two or more often discussing related areas. The patient taking an active involvement or some responsibility for the management of their condition is often referred to within the literature (Cameron & Stewart, 2011; Lawn & Schoo, 2010; Newman, Steed & Mulligan, 2004) and is reflected in the definitions.

1. Barlow *et al.* (2002, p.178)

> *Self-management refers to the individual's ability to manage the symptoms, treatment, physical and psychosocial consequences and life style changes inherent with living with a chronic condition. Efficacious self-management encompasses ability to monitor ones condition and to affect the cognitive, behavioral and emotional responses necessary to maintain a satisfactory quality of life. Thus, a dynamic and continuous process of self-regulation is established.*

2. Wilkinson & Whitehead (2009, p.1145)

> *The ability of the individual, in conjunction with family, community and healthcare professionals, to manage symptoms, treatments, lifestyle changes and psychosocial, cultural and spiritual consequences of health conditions.*

3. Boyers *et al.* (2012, p.367)

> *A single approach or combination of approaches that can be initially taught by any healthcare professional or learned by an individual to enable them to minimise the impact their chronic pain can have on everyday life.*

4. Stewart *et al.* (2014, p.220)

> *A multidimensional process occurring when an older adult perceives the need to self-manage pain and is willing and able to do so with support from others. It involves an older adult with persistent pain being an active individual in their treatment, engaged in the personal development of skills and being aware of their own responses to symptoms. The older adult initiates, participates, and develops their own methods of symptom control by using pain management techniques that lead to improvements in the physical, psychological, and social health domains.*

Figure 1.1: Self-management definitions

The biopsychosocial model facilitates understanding of how self-management is defined (Battersby, Lawn & Pols, 2010). It is clear the majority of the definitions are biopsychosocial and take into account the individual's wider context and daily life (Stewart *et al*. 2014; Boyers *et al*. 2012; Wilkinson & Whitehead, 2009; Barlow *et al*. 2002). Barlow *et al*. (2002) pose self-management as the responsibility of the individual to manage the biopsychosocial impact of their condition on their lifestyle as a whole. This definition fits with the biopyschosocial model encompassing the psychological and social as well as physical aspects of managing a health condition; however the wider social picture such as support is not detailed. Thus there is potential for this to be interpreted as sole patient responsibility, which is not coherent with partnership being required as part of self-management.

Partnership between the patient and health professional is a common element of self-management. Self-management is often discussed as requiring a collaborative approach between the healthcare professional and patient (Johnston, Liddy and Ives, 2011; Lawn & Schoo, 2010; Bodenheimer *et al.* 2002) with this support being integral to self-management. People may find difficulties in dealing with the consequences of long term conditions and self-management is a partnership and is not telling the person they must manage alone (The Scottish Government, 2009). Support can enhance self-management and may be needed at various times to gain control over the biopsychosocial aspects of living with a health condition (Johnston, Liddy and Ives, 2011; The Scottish Government, 2009).

People living with chronic conditions, with the multiple influences on daily life and wellbeing living with a long term health condition view a partnership and healthcare professional support as imperative for self-management (Dwarswaard *et al.* 2015). Dwarswaard *et al.* (2015) conducted a thematic synthesis to understand patient perspectives of support for self-management and included 37 qualitative studies, 19 of which the focus was rheumatic diseases. From the patient perspective information related to the condition was valued, however opportunities to develop this with healthcare professionals and integrate this into daily life was important. Further, recognising the emotional influence of a condition and individualized nature of this; with partnership underpinning each of what people valued. Whilst this provides valuable insight into the needs of people with regards to support and the wide ranging concepts involved with self-management support, Dwarswaard *et al.* (2015) focused on chronic kidney disease, rheumatic diseases and cancer, and thus investigation in relation to pain and specifically LBP and role of the physiotherapist is needed. Further, no healthcare professionals were included within this synthesis and their perspectives warrant exploration due to the perceived importance of their role in supporting self-management.

The importance of support in the context of self-management is further illuminated within the more recent definitions of self-management detailed in figure 1.1. The definition by Wilkinson and Whitehead (2009) while incorporating a biopsycosocial approach, also include support, considering healthcare professionals and family. It must be noted this review context was regarding nursing practice, and the conditions included focused mainly on diabetes and heart disease. The view of healthcare professional support is echoed however with regards to chronic pain by Stewart *et al.* (2014). Stewart *et al.* (2014) provide some understanding of self-management in the context of persistent pain through a concept analysis, which provided no limitations on study design, and included education documents for patient and professionals; opinions pieces were excluded. The concept analysis provides valuable insight into how self-management is portrayed in the context of persistent pain in older people.

Stewart *et al.* (2014) found self-management to be considered as an intervention, a behaviour occurring day to day and an outcome, thus demonstrating the differing contexts self-management can be considered. Self-efficacy often underpinned the self-management approach and control involving reducing interference in daily life, not solely pain control. Further, the complexity of self-management is illuminated considering the person living with pain must be informed regarding the condition, receive support and know how to access this and to have improved health, quality of life and wellbeing. Both Stewart *et al.* (2014) and Dwarswaard *et al.* (2015) illuminate the need for information regarding the condition incorporated into daily life. Whilst Stewart *et al.* (2014) provide a valuable insight into understanding self-management of persistent pain, psychology and nursing focused articles predominated. Thus there is considerable potential to explore self-management in the context of physiotherapy.

In relation to physiotherapy support for self-management, Richardson *et al.* (2014) carried out a systematic scoping review including articles (n=57) exploring what self-management interventions entail, the role of the physiotherapist and occupational therapist within this and which theoretical models feature to support the concept of self-management. Arthritis was the most frequently encountered condition in which a self-management intervention was carried out. Seven articles focused on a self-management intervention for chronic pain and had physiotherapy delivery. Physiotherapist delivery of interventions dominated the sample (n=47). Physical activity was most frequently the focus of self-management interventions with self-efficacy being a frequently used measure (Richardson *et al.* 2014). Whilst it is clear the role of the physiotherapist in the delivery of self-management interventions more research is required on the physiotherapist influence when involved with these interventions (Richardson *et al.* 2014).

It is well documented within the literature that physiotherapist attitudes and beliefs regarding pain can have an influence on the care they provide (Bishop, Thomas & Foster, 2007). Daykin & Richardson (2004) conducted a qualitative study with six physiotherapists and found physiotherapists to have a biomedical view of pain and perceive individuals with what they perceived to have a complex pain presentation as difficult to treat. Further, physiotherapists found implementing a biopsychosocial approach to care challenging. A systematic review by Darlow *et al* (2012) found strong evidence that the attitudes and beliefs of patients are associated with the attitudes and beliefs of clinicians they have consulted. Further, the fear avoidance beliefs of healthcare professionals are associated with higher levels of fear avoidance in patients. Thus, the influence of the physiotherapist must be considered in exploring self-management of pain.

To summarise, pain is complex and subjective with multiple factors influencing this experience in a unique way to that individual. Self-management involves managing the biopsychosocial impact of a condition on a day to day basis. Support is consistently advocated through definitions of self-management, within programmes and from the patient perspective. However, this contemporary understanding does not relate specifically to physiotherapy or LBP and thus requires exploration, therefore this thesis will explore self-management in this context.

1.4 Self-Management Interventions and Low Back Pain

Extant systematic reviews of self-management interventions focusing on LBP and chronic musculoskeletal pain demonstrate heterogeneity of the components of a self-management programme (Oliviera *et al.* 2012) and definitions; both across the systematic reviews themselves as well as the individual studies included. It is considered appropriate to explore current quantitative systematic reviews in this area to illustrate the variation in interpretation of self-management of LBP. The inclusion of studies suggested to be self-management varies from having to include two or more components due to recognising the multiple aspects required to manage pain (Miles *et al.* 2011; Carnes *et al.* 2012), state 'self-management' (Oliviera *et al.* 2012) or adhere to eight specific skills felt to reflect a self-management intervention (Du *et al.* 2011). Thus exploring systematic reviews in this area will generate an overview of what is postulated to be viewed as self-management; as focusing solely on individual studies may not capture within the literature what is categorised as self-management of LBP due to variation of what is determined as self-management.

The diversity of components within self-management interventions focusing on chronic musculoskeletal pain including LBP is reflected in both Miles *et al.* (2011) and Carnes *et al.* (2012). Both of the studies portray a self-management intervention as having multiple components and allow for great variation among these. The single stipulation is that the programmes must contain at least two components to qualify as a self-management intervention. Miles *et al.* (2011) defined a self-management programme by components included, which involved education, a psychological aspect such as cognitive behavioural therapy, physical and lifestyle tasks. The diversity between studies is illuminated, as a study including physical activity and medical education would be very different to cognitive behavioural therapy and relaxation for example. Studies frequently included a psychological component, education and physical activity was shown to potentially mediate outcome (Miles *et al.* 2011). This study was not exploring the value of specific components and does not explore what aspects of an intervention were most effective. Nevertheless this study highlights potential variation in how self-management may be interpreted and poses the question how it is implemented and perceived in clinical practice.

Carnes *et al.* (2012) had a differing focus; to explore which components of self-management interventions are most effective. Forty six randomised controlled trials were included, of which ten were solely LBP and one of these set in the UK. The outcome measures explored fit with Miles *et al.* (2011) recommendations of evaluating self-efficacy as well as including global health and pain intensity, thus exploring a wide range of outcome measures. A conclusion was drawn that short group programmes with a psychological component such as cognitive behavioural therapy delivered by healthcare professionals demonstrated the best outcomes with the majority of studies also containing education and physical activity. However, as the majority of studies contained these the author could not compare this against interventions without each of the components. Nicholas *et al.* (2013) randomized controlled trial of a pain self-management programme for older adults with chronic pain supports the finding of multi components for self-management. The benefits of education, in this case pain mechanisms, a psychological component including goal setting and exercise demonstrated significant differences and medium effect size in comparison to exercise alone in pain distress, disability, fear avoidance, pain self-efficacy and depression. It would be interesting to explore if these holistic measures transfer into individuals daily lives and maintenance of self-management due to the programme being followed up in the short term and delivered by healthcare professionals.

In support of the most recent definitions of self-management, the role of the healthcare professional in self-management of pain is highlighted. However, Carnes *et al.* (2012) recommend the need for research into the benefits of specific components of self-management interventions. Further to this, as the majority of studies contained physical activity, education and a psychological component there was little comparison of the added value of this. Thus, this study does not provide a lot of direction for implementing self-management interventions. Further, there is the need to explore if multiple components are being employed in clinical practice, and what these are viewed to be. If the components of self-management are not determined then this presents a challenge for interpretation of what self-management involves and how to implement this in clinical practice. Gaining people living with LBP and physiotherapists experiences and perspectives regarding self-management will allow for development of understanding in this area. Alongside this, in clinical practice, group programmes may not always be offered, thus exploration of individual encounters is required. The current study proposes to explore how physiotherapists interpret and implement self-management and understand this in relation to their clinical practice.

In contrast to viewing self-management interventions as having multiple components, Du *et al.* (2011) included studies focusing on chronic musculoskeletal pain and aimed to explore the effectiveness of self-management programmes, that must feature eight specific skills, on pain and disability outcomes. Although Oliveira *et al.* (2012) aimed to explore the same outcomes; the authors included any studies where a study specified a 'self-management' intervention had occurred. Following this, eligible studies content was compared against six core components and used in a sensitivity analysis.   These core components were from the Australian Primary Health Care Strategy report (2009) and have similarities to Barlow *et al.* (2002) and Wilkinson and Whitehead (2009) definitions of self-management in figure 1.1, encompassing the biopsychosocial considerations of managing a health condition and seeking support where needed, which allowed for a broader inclusion of studies in contrast to the specific skills used by Du *et al.* (2011).

Du *et al.* (2011) included studies on the basis of specific skills informed by generic self-management approaches; in the context of LBP this yielded limited results. Du *et al.* (2011) included nineteen randomised controlled trials, with sixteen studies focusing on arthritis and three on chronic low back pain. The author concluded self-management programmes for arthritis were effective over one year however there was insufficient evidence to draw conclusions for chronic LBP. It is clear the diversity apparent within the few included LBP studies for the review, with Du *et al.* (2011) having a post pregnancy population (Bastiaenen *et al.* 2008) and an Internet based self-management programme (Buhrman *et al.* 2004). Thus their studies focusing on LBP form a small sub population of people living with LBP and a specialist intervention that may not reflect clinical practice. Through utilising specific skills, Du *et al.* (2011) may have potentially excluded relevant studies. The important question has been raised if the generic skills often associated with self-management apply to pain (Cameron & Stewart, 2011). This warrants further investigation, as limited results were generated when using this as criteria to explore self-management interventions for LBP.

A programme of the specific skills associated with some self-management interventions are investigated in a randomized controlled trial by Haas *et al.* (2005). The study compares waiting list control with the generic Chronic Disease Self-Mangement Programme by Lorig *et al.* (2001) which contains core components including problem solving, goal setting, symptom management, telephone support and is delivered by lecture and supplementary material. Pain, disability, self-efficacy and general health status outcomes demonstrated no significant difference at six months compared with waiting list control. In contrast a randomized controlled trial by Damush *et al.* (2003a) compared usual care to a modified version of the programme used by Haas *et al.* (2005), containing a similar format for an acute LBP population. Similarly to Haas *et al.* (2005) a range of outcome measures including pain, function, disability and self-efficacy were assessed. Self-efficacy demonstrated a significant change at 4 months compared with control. This was sustained at 12 month follow up (Damush *et al.* 2003b). However, there were no significant differences in pain or disability. The two studies differ with respect to population; Haas *et al.* (2005) recruited an older population with LBP duration of three months or more, whereas Damush *et al.* (2003a) were of a timescale less than three months. Thus, there appears a difference with outcomes with these specific self-management programmes with LBP of a longer duration.

Oliviera *et al.* (2012) developed the findings discussed above through their meta analysis by concluding self-management programmes have only small significant effects on pain and disability; frequently VAS scale and Roland Morris Questionnaire, for LBP compared with minimal intervention. Further research is advocated with regards to self-management of LBP to understand potential barriers to this and what components people living with LBP find useful; in which qualitative research would prove valuable to explore this (Oliviera *et al.* 2012). Alongside this Du *et al.* (2011) and Oliviera *et al.* (2012) acknowledge the limitations in focusing solely on pain and disability outcomes. To gain a holistic understanding of a phenomenon a qualitative approach is suited (Gibson *et al.* 2003). Thus, the current study proposes to explore qualitative literature of people living with LBP to develop understanding in this area of what is viewed as self-management, what is involved with this and what is occurring on a day to day basis.

Contrast in findings among studies with regards to effectiveness has been found. Those studies that were specific regarding skills to be classed as a self-management programme showed limited effectiveness with regards to influence on pain and disability outcomes (Oliviera *et al.* 2012; Du *et al.* 2011). Whereas Carnes *et al.* (2012) found effectiveness of specific components. Stewart *et al.* (2014) showed variation in what was involved in skills and behaviours with regards to self-management of pain. There is thus the opportunity to explore what is being advocated in clinical practice, by frontline professionals, physiotherapists in relation to self-management and to explore what people living with LBP are doing day to day and what components they use for self-management, if at all. Thus, the proposed study will be exploring self-management in the context of day to day life to gain a more holistic understanding of self-management.

The focus of the reviews discussed are specific interventions, however self-management occurs as a behavior day to day (Stewart *et al.* 2014) and is a dynamic process (Kendall *et al.* 2011) there is exploration required if people are maintaining self-management practices in daily life. Self-management has been proposed to involve managing the emotional and cognitive response to pain (Stewart *et al.* 2014). LBP has been shown to have multiple influences and cognitive responses, thus the current study proposes to consider if people living with LBP are able to manage the biopsychosocial impact of this. Qualitative research is ideally placed to explore the biopsychosoical impact of a condition and will facilitate understanding of self-management of LBP as a day to day behavior (Bunzli *et al.* 2013).

The variation among the extant systematic reviews and studies is apparent and there is an acceptance of multiple components making up a self-management intervention. Programmes are showing great heterogeneity with regards to content (Oliviera *et al.* 2012). However, for clinicians supporting self-management it demonstrates a considerable variation in this area, and poses the question as to what clinicians are doing on a day to day basis with regards to self-management, what they view as self-management and what components are implemented. The physiotherapist role in self-management requires consideration, alongside this, their needs must be considered given the multiple interpretations of self-management and potential complexity of LBP.

The importance of the healthcare professional role was highlighted in Carnes *et al.* (2012) review discussed; physiotherapists frequently work with people living with LBP and thus their role in self-management warrants exploration. Alongside this, current definitions detailed in figure 1.1, and reviews portray the potential role of the healthcare professional for support (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009). Multiple studies have recommended health professional education as it is the health professionals who will often be responsible for educating and supporting patients to self manage (Lawn & Schoo, 2010; Newman, Steed & Mulligan, 2004; Barlow *et al.* 2002). The focus of these studies has been self-management for a range of chronic conditions, thus there is the need to explore this in relation to LBP and what education and support physiotherapists require. The proposed study will thus also explore education and training needs for physiotherapists with regards to supporting self-management of LBP due to their frontline role.

Although there is variation among the systematic reviews discussed, there is a consensus of uncertainty regarding self-management of LBP, both with regards to effectiveness (Du *et al.* 2011; Oliveria *et al.* 2012) and the components involved with this (Carnes *et al.* 2012; Miles *et al.* 2011). LBP is an individualised, complex condition with multiple potential influences. Physiotherapists are encouraged to provide evidence based management, considering the best available evidence, patient preferences and clinical experience (Sackett *et al.* 2000). The literature review has highlighted the diversity among self-management approaches and differences in what this can be.

People are living day to day with LBP and physiotherapists encounter this frequently in clinical practice and are required to support this client group to manage the biopsychosocial impact of their LBP. Consequently there is a need to first of all explore the literature in this area regarding patient and physiotherapist experiences systematically. This will form chapter 3 of the thesis, a qualitative synthesis. Alongside providing an understanding of self-management, the qualitative synthesis will guide further research of the thesis to understand self-management in the context of LBP and in relation to day to day life from both physiotherapists as frontline professionals and people living with LBP experiences. Utilising current literature, patient and physiotherapist experiences and perspectives an education programme for physiotherapists will be developed and evaluated.

As a physiotherapist, evidence based practice is a fundamental part of practice (Herbert *et al.* 2011). Evidence based practice involves the use of best evidence in combination with considering patient preferences and clinical expertise (Sackett *et al.* 2000). Within physiotherapy, recommendations are built on these multiple factors of evidence-based practice such as the individual patient and their expectations, goals and the clinical experience of the physiotherapist (Gibson & Martin, 2003). Patient preferences are central to evidence based practice and can provide valuable evidence (Rycroft-Malone *et al.* 2003). In order to understand the needs of people living with a condition, in this case LBP, their whole context needs to be considered and qualitative research is well placed to explore and understand complexities (Gibson & Martin, 2003). The first two phases of this thesis will explore self-management of LBP from the patient and physiotherapist perspective. In the context of this thesis, the multiple influences on LBP, variation among individuals and uncertainty regarding self-management demonstrates complexity, lending qualitative research as an ideal means to explore this.

The final phase of this thesis, the development of an education programme will be informed by the findings of the previous two phases. There are calls for research to be more usable for clinicians (Greenhalgh, Howick & Maskrey, 2014). Although this relates to presentation of evidence in publications, dissemination of this in the form of education is to be considered. In service training within clinical practice is valued and a method to implement evidence based practice; this must be applied and consider time constraints with human delivery being valued (Scurlock-Evans, Upton & Upton, 2014). It is unlikely to change practice through solely advocating practitioners to read research, evidence needs to be relevant and applied to individual contexts (Rycroft-Malone *et al.* 2003). Within the literature when evidence based practice is discussed, it is often related to critical appraisal and literature searching (Coomarasamy & Khan, 2004). However, Greenhalgh, Howick and Maskrey (2014) argue that evidence based practice is more than critical appraisal and that healthcare research will benefit from more focus on studying and incorporating patient experiences alongside applying research to real cases in the clinical setting.

Through the combination of patient and therapist perspectives and current literature this thesis aims to develop the physiotherapy evidence base and apply these findings in a relevant accessible way for physiotherapists working within clinical practice.

1.5 Aims

The overall aims of this thesis are:

- To gain an understanding of self-management in the context of LBP
- To explore people living with LBP understanding and experiences of self-management of LBP
- To explore physiotherapists understanding and experiences of self-management of LBP
- To explore the role of the physiotherapist in self-management of LBP
- To explore physiotherapists training needs regarding self-management in their clinical practice
- To design, implement and assess the feasibility of an education programme for physiotherapists in clinical practice

The study is designed in three distinct but related phases in order to address these aims.

Chapter 2

2. Methodology

2.1 Chapter Overview

The overarching methodological approach of the study will be given. This chapter will present a rationale for the use of a mixed method design and how this relates to the overall objective of the study. A rationale for the methods to be utilised in the three phases of the study will be provided.

2.2 Overall Study Purpose

To explore people living with LBP and physiotherapist experiences of self-management of LBP to inform the development of an education programme for physiotherapists with the aim to support self-management. Favorable ethical opinion was received from NRES Committee North East – Country Durham and Tees Valley (Appendix 1). In conjunction with this, NHS Research and Development approval was gained.

2.3 The Medical Research Council Framework for Complex Interventions

The Medical Research Council (2008) advocates the use of both qualitative and quantitative methods during testing the feasibility of a study. The Medical Research Council Framework (2008) guidelines place emphasis on the importance of development work before an intervention and of testing the feasibility of an intervention. Within this thesis a qualitative synthesis exploring extant literature in the area will inform qualitative studies with patients and physiotherapists. This will inform development of an intervention. The Medical Research Council Framework (2008, p. 7) defines complex interventions as “interventions that contain several interacting components”. This is the case for the physiotherapist education being implemented in a clinical practice setting with multiple influences. The guidelines state multiple stages are needed to design, implement and evaluate an intervention. In the case of this study, phase one and two will inform the design aspect of the third phase, and education programme intervention. A key stage of the guidelines is assessing the feasibility of the intervention to ensure that the intervention can be delivered, if there are problems with this and to explore acceptability. The intervention aspect of this study is thus appropriate as a feasibility study as the intervention will not have been delivered to physiotherapists in clinical practice so understanding of acceptability of the programme is necessary (Lancaster, Dodd & Williamson, 2007).

2.4 Pragmatism

The overall purpose of the study is informed by practice and aims to produce findings to directly inform contemporary healthcare, with a particular focus on physiotherapy practice. Pragmatism is concerned with the outcomes of research, utilising multiple methods to explore the study purpose, emphasis is on the practical implications of the research (Creswell, 2013). Pragmatism also recognises the context dependent nature of research, with outcomes affected by this context (Teddlie & Tashakkori, 2010; Creswell, 2013). Patton (2002) argues that pragmatism allows researchers to have a choice of methods available, to not be limited by specific paradigms and choose the most appropriate methods for the study purpose. A range of methodological opportunities should be available for researchers who are focused on practical, ‘real world’ questions (Patton, 2002). The study purpose and research question are the key emphasis of pragmatism, with methods chosen to best address the study problem (Creswell, 2013).

2.5 Multiphase Mixed Methods Design

A pragmatic viewpoint holds the research question as key to determining the methods to be used. Alongside this, pragmatism views qualitative and quantitative methods as compatible indeed mixed methods research often operates within a pragmatic viewpoint (Teddlie & Tashakkori, 2010). The concern is with the selection of a design that is appropriate for the problem (Kettles, Creswell & Zhang, 2010). Often a mixed method approach will be used to generate practice relevant findings (Barbour, 2014). This is through permitting an approach that most appropriately fits the research purpose (Bishop, 2014). In the case of the current study, which has a practice relevant purpose, it is to explore experiences and perspectives to inform an education programme for physiotherapists. This objective requires multiple stages and methods to achieve the desired goal. Barbour (2014) proposes to direct the focus away from the opposing features of qualitative and quantitative research otherwise potential opportunities for using both of these methods may be overlooked.

There are various suggested designs for mixed methods research given by multiple authors (Bishop, 2014). Creswell and Plano Clark (2011) offer a mixed method research design termed the ‘multiphase design’. A multiphase design involves a series of connected stages or studies in order to address an overall objective (Creswell & Plano Clark, 2011). The key aspect of this design is that the multiple phases must share a common purpose, or overall objective, as this is how they are linked (Creswell *et al*. 2011). Any combination of methods can be used in a multiphase design (Bishop, 2014). A strength of multiphase design projects relates to the premise that they are conducted over a period of time and phases can inform one another (Creswell *et al.* 2011). Figure 2.1 details the proposed multiphase mixed method study.

The multiphase design suits the interconnected research aims of this thesis. Although the aims are explicitly linked, there are differences that will require multiple methods to suitably meet the research objective. The study aims to investigate people’s experiences and understanding of self-management of LBP. Due to the complexity and subjectivity of self-management and pain, experiences are most applicable to explore, with qualitative methods being the most suitable to achieve this objective.

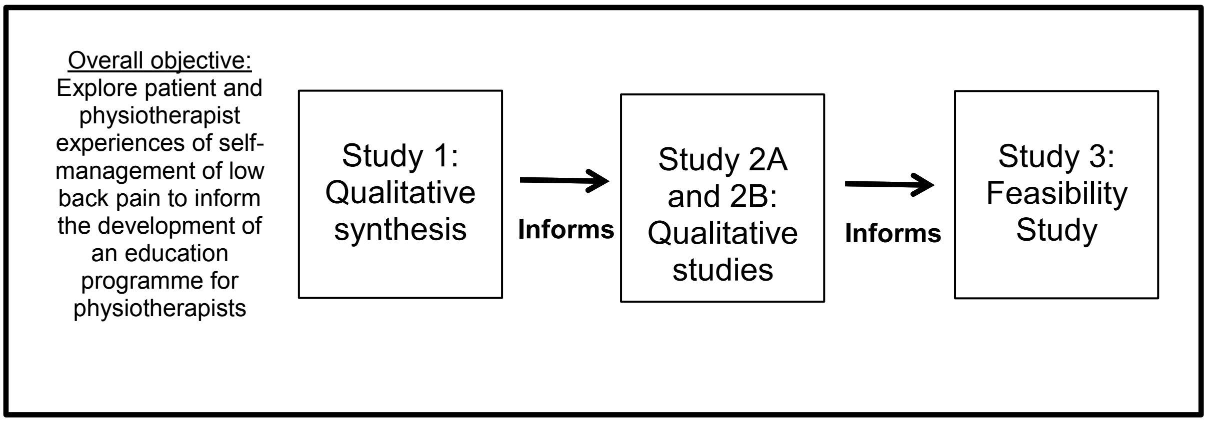


Figure 2.1: Multiphase research design of the thesis informed by Creswell & Plano Clark (2011)

The development of an education programme will require the feasibility to be tested in practice, alongside gaining participants viewpoints to begin to understand the impact and acceptability of this in practice.

2.6 Study 1: What are the Experiences of People Living with Low Back Pain and Physiotherapists Regarding Self-Management of Low Back Pain? A Qualitative Synthesis

Qualitative research is concerned with understanding a phenomenon in depth and the meanings associated with this (Gough *et al.* 2012). Qualitative synthesis is the integration of single qualitative primary research studies that share a common focus with the aim to further understanding through either enhancing this knowledge or providing a new perspective (Paterson, 2012). Although commendable for their rigour, traditional systematic reviews often focus on effectiveness questions, for example an intervention and utilise randomised controlled trials (Dixon-Woods *et al.* 2006). There are complex questions wider than effectiveness, that this traditional method is inadequate alone to use, where qualitative methods are appropriate in developing understanding (Dixon-Woods *et al.* 2006). Understanding and experiences regarding self-management of LBP is the focus for this phase.

In response to the growing acceptance of qualitative research in evidence-based practice, qualitative systematic reviews or qualitative synthesis are increasing in popularity (Sandelowski *et al*. 1997). Indeed there is an increasing focus regarding how single qualitative studies can be combined to inform practice (Dixon-Woods *et al.* 2006; Sandelowski *et al.* 1997). Qualitative synthesis can be used in healthcare research, as both a stand alone study or can also be utilised to inform or extend systematic reviews of effectiveness (Hannes & Macaitis, 2012). This growing interest has not been without criticism. Pope, Popay and Mays (2007) acknowledge that qualitative research is concerned with providing detail and contextual factors. Thus it may be questioned whether these studies can be synthesised, as there is the risk of losing this depth and context (Pope, Popay & Mays, 2007).

Qualitative synthesis has the potential to enhance knowledge. A review by Richardson & Lindquist (2010) argues for the need for qualitative synthesis to inform physiotherapy practice. This review highlights the inadequacy of experimental approaches to inform the physiotherapy evidence base. The authors discuss the value of qualitative research and its impact on physiotherapy practice of discovering underlying experiences and meaning, rather than focusing on efficacy of interventions as per traditional systematic reviews. They propose that there are a wealth of qualitative studies relevant to physiotherapy accumulating but they are not being used to the full potential qualitative synthesis can offer. Examples given include the ability of a qualitative synthesis to answer a new question through exploring a range of studies and to ultimately gain a deeper understanding. Due to the wealth of studies, qualitative synthesis can also make these studies more manageable for researchers and clinicians to explore (Richardson & Lindquist, 2010). This approach is thus suitable for this phase of the thesis to gain a deeper understanding of self-management of LBP.

There are a range of documented approaches to qualitative synthesis without one universally agreed process (Hannes & Lockwood, 2012; Sandelowski & Barosso, 2007). There are different levels of interpretation related to different methods of qualitative synthesis. A frequently cited approach to qualitative synthesis is meta-ethnography. Meta ethnography develops new interpretations from the qualitative studies (Centre for Reviews and Dissemination, 2009). This approach involves a complex number of stages to 'translate' single qualitative study findings into one another to present new findings, with this translation stage being the hallmark of this approach (Britten & Pope, 2012). Hannes and Macaitis (2012) carried out a review of qualitative synthesis between 2005-2008 to explore the process and transparency of the methods used in qualitative synthesis. With regards to the synthesis approach many studies claimed to use meta-ethnography however it transpired their actual synthesis did not adopt this approach. Thus, it is important that the synthesis approach used reflects the aims of the study and clearly follows the guidance and steps necessary to fulfill the approaches requirements.

The aim of the qualitative synthesis for this thesis is to not develop new theory at a level above the primary studies included. It is to explore the extant literature and stay close to their findings to develop an understanding of the main themes across a range of current literature to develop and inform future studies. Thematic analysis has been considered as a suitable approach to meet this aim as it stays true to the original literature but provides an opportunity for the development of themes to reflect the content related to the study question from a range of studies (Pope, Popay & Mays, 2007). This does not suggest a summary of findings; Sandelowski and Barosso (2007) make the fundamental point that the aim of a synthesis is not to provide a summary, but an integration of findings from studies to inform the research question. An integration of findings relevant to the research question will inform the development of phase two primary qualitative studies.

2.7 Study 2A and 2B: Qualitative Methods

Qualitative research aims to capture people's beliefs, motivations, and experiences in order to understand behaviour (Gibson & Martin, 2003). It is subjective with a focus on the individual and the quality and depth of an experience (Flick, 2014 Ohman, 2005). More importantly, healthcare research aimed at understanding health behaviour is viewed as lacking if qualitative methods are not used (Sim, 1998). Qualitative research allows a means of recognising what people view as important in healthcare and what improvements need to be made (Pope, van Royen & Baker, 2002). Furthermore, the outcomes of rehabilitation depend on these attitudes, beliefs and motivations; studies that utilise a qualitative design can be useful for developing and improving rehabilitation through gaining an understanding of peoples' experiences and perspectives (Ohman, 2005).

Physiotherapists often work with people with chronic problems who may require long term or intermittent support therefore it is necessary to understand people's experiences and needs in a wider context to provide holistic care (Gibson & Martin, 2003). Qualitative research is thus appropriate to gain this deeper understanding due to its aim to advance understanding of people's lives and experiences (Fossey *et al.* 2002).

LBP is a complex phenomenon with multiple factors influencing the experience. Alongside this, self-management is multifactorial and poorly understood in this context. These complex areas require a qualitative approach to develop understanding as this can help to begin to develop understanding of a complex experience (Barbour, 2014). People living with LBP will have an individualised experience of this; similarly physiotherapists working with this client group will have their own range of experiences. Therefore the aim of qualitative research is not to find one answer; it is to explore the differences in experience and deepen understanding (Ohman, 2005).

A qualitative design will be used for study A and study B. Patton (2002) states qualitative methods can stand-alone and do not need to be embedded within philosophical literature. He argues qualitative research can be practical and facilitate answers to problems whilst proving useful to inform and extend practical knowledge. This phase of the study is exploring real life practice, and utilising findings to inform practice development. Caelli, Ray and Mill (2003) propose qualitative research can be generic and not based on traditional theoretical positions. Qualitative descriptive or generic studies are still interpretive and valuable (Sandelowski, 2010). There is the view that there can be the incorrect using of philosophical and theoretical positions as declaring alliance to one is better than not at all (Sandelowski, 2010; Caelli, Ray & Mill, 2003). For the purpose of the study, specific aims are being explored to produce practice relevant knowledge. Within the preface of this thesis the background of the researcher is made explicit, this is important to demonstrate to enhance credibility, as all researchers will bring assumptions to the research process (Barbour, 2014).

2.7.1 Purposeful sampling

Participants will be recruited using purposeful sampling. Purposeful sampling is often used for qualitative research as it aims to select participants based on specific characteristics or experiences relevant to the research question (Bryman, 2014). This method allows the researcher to select individuals who are of specific interest to the research study (Creswell, 2013).

Alongside clear discussion of the sampling process it is important to provide detailed information regarding the sample in qualitative research. Contextual information regarding the demographics of the population and setting of the research will enhance transferability; this refers to whether the findings of the study can be applied to other settings, which the reader will ascertain, utilising the background information provided (Malterud, 2001). Due to qualitative research often recruiting a small number of participants and not aiming to generalise, contextual factors are important for the reader in judging their relevance to their setting (Bryman, 2014).

2.7.2 Study 2A: Physiotherapist views and experiences of self-management of low back pain in clinical practice

2.7.2.1 Focus groups

A focus group comprises of a collective a group interview which requires participants to share certain characteristics or experiences related to the topic of interest (Patton, 2002; Kruegar & Casey, 2000). The strength of using focus groups in order to explore physiotherapist experiences is that they are particularly appropriate as the attitudes of professional groups affect healthcare delivery (Davidson, Halcomb & Gholizadeh, 2010) and focus groups provide a means to gather this collective viewpoint (Wills *et al.* 2009). Thus are useful for studying professional practices (Barbour, 2014). The interaction between participants is the key aspect of a focus group (Kitzinger, 2005). It is important that participants who are taking part discuss the topic among one another not solely to the researcher (Barbour, 2007). A review conducted by Bradbury-Jones *et al.* (2009) highlights that focus groups has the advantages generating rich data through the interaction of participants. Through responding to other participants views further points can be raised which may not have been uncovered during a one to one interview (Patton, 2002).

This study aims to explore physiotherapist understanding and experiences of self-management of LBP and whilst also aiming to elicit their training needs regarding this. Focus groups are often used in the planning and design of interventions (Kidd & Parshall, 2000; Mitchell & Branigan, 2000). They are useful to increase understanding of a particular topic and are valuable for generating ideas (Mitchell and Branigan, 2000) this makes them particularly appropriate as the method for data collection for this study. As discussed there is no consensus regarding defining self-management thus focus groups potential for generating rich data to gain an insight into this professional group experiences and beliefs will support developing current understanding and training needs identified.

2.7.2.2 Data analysis: The Framework Approach

The framework approach will be used to guide the analysis of all of the qualitative primary data within this study. Ritchie & Spencer (1994) developed the framework approach, which is a qualitative data analysis method. This method was originally developed for social policy research but more recently this approach has been frequently adopted for healthcare research (Gale *et al.* 2013).

The framework approach fits with the pragmatic mixed method design of the overall study as it is not affiliated with a single philosophical approach, rather it can be used for qualitative analysis where required when the generation of themes is the aim (Gale *et al.* 2013). A common viewpoint when the framework method is described is that the analysis is informed by predefined topics or aims informing the themes, thus beginning analysis deductively, however the method is flexible to allow themes to be generated from the data (Mays & Pope, 2000; Srivastava & Thomson, 2009). Priori or pre determined areas of focus should not restrict the analysis process and the researcher must allow ideas to also emerge from the data (Srivastava & Thomson, 2009). This method of analysis is particularly appropriate for this study due to there being pre defined objectives and issues to explore, however recognises new aspects may emerge from the data, which is valuable to the project due to phases informing one another. This method allows the combined approach of exploring pre defined aims or themes but allowing areas not previously considered to emerge (Gale *et al.* 2013).

The framework method of analysis consists of a matrix based method which assists with the ordering and synthesising of qualitative data (Ritchie, Spencer & O'Connor, 2003). Framework analysis utilises interrelated steps to facilitate the management of qualitative data and analysis (Ritchie & Spencer, 2002). Framework is traditionally cited as having five connected steps (Mays & Pope 2000; Ritchie & Spencer, 2002). Ritchie and Spencer (2002) describe these stages, which will be summarized as follows. The first stage ‘familiarisation’ involves the researcher immersing themselves in the data and becoming fully familiar with the transcripts making notes of themes or ideas. Following this, the second stage ‘identifying a thematic framework’ involves constructing a thematic framework from both pre determined themes or issues and those emerging from the data which will facilitate sorting of data into these initial themes. The thematic framework is then applied to the data in a process termed ‘indexing’. The raw data is annotated with the corresponding reference to the thematic framework. Following this, to allow the data to be presented as a whole charts are used with headings and sub-headings from the thematic framework. It is here that raw data is summarised to the relevant heading and case. This is viewed as the key aspect of the framework approach, summarising the data, not simply copying raw data into a chart, however this must still reflect the language of the participants (Spencer *et al.* 2014). The final stage ‘mapping and interpretation’ involves utilising the charts developed to interpret the data, seeing the data as a whole and looking for patterns and explanations within the data to develop the final interpretation (Ritchie & Spencer, 2002).

There are later publications regarding the framework approach, which cite three stages which will be followed for this study (Spencer *et al.* 2014; Ritchie, Spencer & O’Connor, 2003). This approach to framework analysis appears to give more detail regarding the process of analysis. These three stages involve ‘data management’ which include the first four stages of the framework previously described. Following this ‘descriptive analysis’ involves examining the charted data to uncover elements and dimensions (Spencer *et al.* 2014). Elements are concise statements present in the responses from individuals; these elements are then grouped into a dimension which captures what they are about and differentiates the focus of the elements (Spencer *et al.* 2014). The dimensions are then grouped into categories, allowing refinement of the overall final themes (Ritchie, Spencer & O’Connor, 2003). Figure 2.2 illustrates how the development of themes will be presented within this thesis. The diagram illustrates that the initial

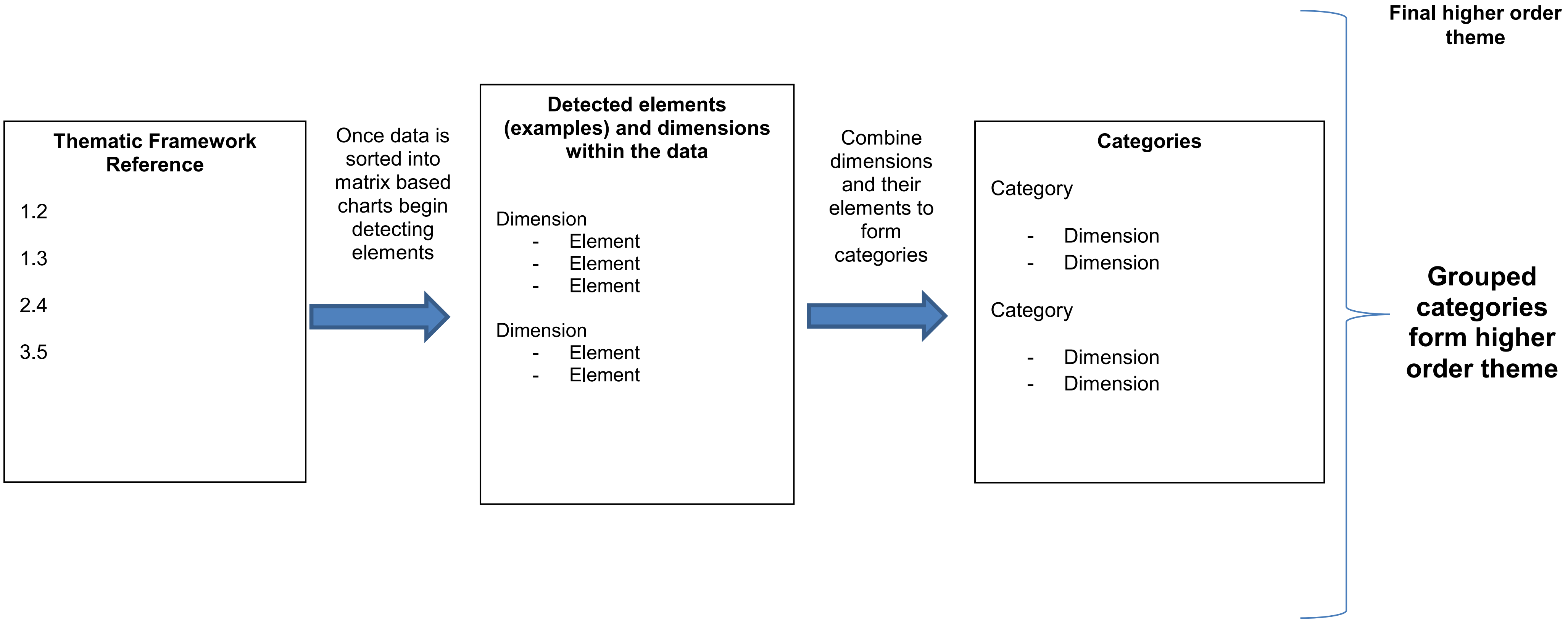


Figure 2.2: An example of the process of Framework Analysis

Informed by Spencer *et al.* (2014);
Ritchie, Spencer & O'Connor (2003)

thematic framework theme or sub theme will be given to provide an audit trail of what initial descriptive themes informed the development of the final higher order theme. This stage involves clear direction of how to use the developed charts through beginning with the initial themes and then identifying elements and dimensions within the data to allow refinement and a comprehensive understanding of the data (Ritchie, Spencer & O'Connor, 2003). The final stage 'exploratory analysis' may or may not take place depending on the aims of the research but involves identifying patterns and associations within the data (Spencer *et al.* 2014; Ritchie, Spencer & O'Connor, 2003).

Although the framework has been described as distinct stages this is not the case, the researcher will move between stages during the analysis process (Ritchie & Spencer, 2002). Framework is intended to be guidance for qualitative analysis and is not intended to be a stringent (Spencer *et al.* 2014) or a mechanical process; it aims to allow creativity and analytical thinking (Ritche & Spencer, 2002). However, through following a systematic process this makes the stages of analysis accessible to the researchers as it has been well documented, thus allowing the analyst to be able to make connections and go back to previous ideas and develop final themes (Ritchie & Spencer, 2002). Framework is credited for being grounded in the data (May, 2001; Ritchie & Spencer, 2002). Further, it ensures that all relevant data is reviewed systematically, is clear and permits ease of access to original material (Ritchie and Spencer, 2002).

Due to the series of stages framework is considered to be credible as it demonstrates a clear audit trail of the steps of data analysis and how the raw data became the final presentation of findings (Gale *et al.* 2013). Framework also makes large amounts of data manageable (Bowling and Ebrahim, 2005). The phases of the study are dependent on one another, thus making this method appropriate. As discussed, the framework method provides an audit trail of the process of data analysis from the transcript to the final themes. This process will enhance the confirmability of the findings allowing the reader to see procedures employed in the data analysis process (Shenton, 2004).

The framework method of analysis has been used in qualitative studies focusing on experiences of chronic LBP (May, 2007; Cooper, Smith & Hancock*,* 2009). It has also been used in nursing research where focus groups have been the method of choice (Manias & Bullock, 2002; Takase, Maude & Manias, 2005). For this specific phase of the study, the framework is appropriate to use as it allows the specific questions regarding physiotherapists' experiences of self-management to be explored as well as encouraging topics not previously considered to emerge (Ritche & Spencer, 2002). Thus, the strengths of this approach include a clear audit trail from the raw data to final themes, gaining a comprehensive understanding of the data and allowing pre defined aim to be explored whilst being flexible for new data to emerge (Gale *et al.* 2013; Ritchie & Spencer, 2002).

2.7.3 Study 2B: Are people living with low back pain 'self-managing'?

2.7.3.1 Semi structured interviews

Semi-structured interviews are suitable for this phase of the study. This method of data collection is appropriate as the study aims to explore individual perspectives and experiences of LBP, which semi structured interviews have the advantage of being able to achieve (Offredy & Vickers, 2010). Semi structured interviews allow an interview schedule to be used regarding areas that need to be covered but are flexible enough to allow new topics of interest to be pursued (Bryman, 2014). In keeping with the aims of qualitative research to gain rich and in depth information from individuals, semi structured interviews allow the participants to control which areas to focus upon and not having the researcher in full control of the direction of discussion (Barbour, 2014). New information, which may not have been considered, previously has the potential to occur from semi structured interviews (Offredy & Vickers, 2010). Barbour (2014) emphasises the importance of balance within interviews of the researcher agenda and the opportunity for participants to provide their own viewpoints.

Thus semi structured interviews are appropriate for this aspect of the study. Semi structured interviews aim to provide a deeper understanding of social phenomena than would be obtained from purely quantitative measures such as questionnaires (Silverman, 2010). They are useful when detailed insights are required from participants (Gill *et al,* 2008),

2.7.3.2 Framework analysis

Framework analysis will be used to analyse the data for this phase of the study. This will follow the same approach as discussed in section 2.7.2.2. The analysis will begin with the development of initial priori areas to focus upon whilst also allowing data generated from the lived experiences of people with LBP to generate ideas or themes not previously considered (Gale *et al.* 2013).

2.8 Study 3: A Mixed Methods Feasibility Study Exploring the Feasibility of a Pain Education Programme for Physiotherapists in Clinical Practice

A mixed method single arm feasibility study involving a single group pre test post test design and focus groups with participants following the intervention. Although single group designs are reported to not be ideal due to being unable to ascertain treatment effect they are valuable as a phase before a full study to decide if a more comprehensive study should take place (Robson, 2011).

There is a lack of clarity regarding defining feasibility studies within the literature (Arain *et al.* 2010; Whitehead, Sully & Campbell, 2014). A review by Arain *et al.* (2010) evaluated how feasibility and pilot studies are reported and provide some guidance regarding the features of a feasibility study. Feasibility studies are used before the main study to explore factors, which will help with the development of a main study (Arain *et al.* 2010). Preliminary work before a main trial is classed as a feasibility study and should not be confused with a pilot study, which may simulate on a smaller scale the design of a main study (Whitehead, Sully & Campbell, 2014). Feasibility studies can be used for a number of reasons related to the trial, in the case of the current study it is the feasibility of the outcome measures to be used, the retention of participants and acceptability of the intervention (Arain *et al.* 2010; Lancaster, Dodd and Williamson, 2004). Trends among outcome measures will be explored.

The feasibility study will use both quantitative outcome measures and focus groups. Furthermore, utilising both qualitative and quantitative methodologies increases the likelihood of more comprehensively researched and better-understood results (Moffat *et al.* 2008). Framework analysis will be used for the qualitative aspect of the current study. This process will be more deductive than phase two as the focus groups are being used to specifically explore acceptability of the education programme.

Chapter 3

3. What are the Experiences of People Living with Low Back Pain and Physiotherapists Regarding Self-Management of Low Back Pain? A Qualitative Synthesis

3.1 Background

Self-management of pain can be viewed as a day-to-day behaviour (Stewart *et al.* 2014). It is dynamic, and a process, which is lived by the individual and ultimately defined by them (Kendall *et al.* 2011). It would follow that this should therefore be explored through individual experiences and perspectives of this day-to-day process. However, the experience and understanding from the perspective of individuals is not often considered or well understood (Cameron & Stewart, 2011). A large proportion of the literature explores self-management programmes that are at a certain point in time and contain pre-defined activities. The systematic reviews discussed in chapter 1 highlight the difference in the way in which self-management is viewed. Miles *et al.* (2011) acknowledge studies differ in their definitions and what constituted as a self-management programme. This lack of consensus creates a confusing picture to practitioners and readers alike (Cameron & Stewart, 2011).

As self-management has no one definition (Cameron & Stewart, 2011; Barlow *et al.* 2002) and is individualised (Kendall *et al.* 2011), exploring people living with LBP and physiotherapists experiences of this phenomenon will allow for development of understanding in this context. Consequently there is the need to explore what people living with chronic or recurrent LBP are doing day to day and how they are managing their LBP, if at all. It is also important to explore support as this has the potential to influence self-management, which physiotherapy has been proposed to do (Richardson *et al.* 2014; Moffat, 2002). In the context of this thesis, the predominant focus will be support from physiotherapists.

Physiotherapists have a frontline position and are expected to promote self-management but are presented with multiple interpretations of self-management within the literature and little guidance of what this involves. Physiotherapists' views must also be understood, as these will have an influence on patient care (Daykin & Richardson, 2004). Alongside this their specific contribution to self-management warrants investigation (Richardson *et al.* 2014). Exploration of physiotherapists' experiences of self-management will allow an understanding of what is understood by this phenomenon and what occurs in clinical practice. In order to achieve this understanding from people living with LBP and physiotherapists' perspectives exploration of qualitative research is required. A qualitative synthesis is valuable for physiotherapy practice to explore the literature regarding these experiences and to deepen understanding of the phenomenon, rather than focusing on efficacy (Richardson & Lindquist, 2010). A qualitative synthesis was proposed to explore people living with LBP and physiotherapists experiences of self-management of LBP to address a gap in extant literature.

No existing qualitative synthesis that had explored self-management of LBP from the patient and physiotherapist perspective was identified from an initial search. A search of online databases was carried out. The databases searched were, CINAHL, MEDLINE, AMED and The Cochrane Library. The search terms for qualitative systematic reviews were used as recommended by Noyes and Lewin (2011). The same systematic reviews were returned by CINAHL and MEDLINE. The search terms used are detailed in table 3.1.

Table 3.1: Search terms to identify existing systematic reviews

Database	**Search terms**
The Cochrane Library	Back pain AND (self care OR self management)
CINAHL	• Systematic review AND back pain AND (self-management or self care) • Systematic review AND chronic pain AND (self-management or self care) • Qualitative systematic review* OR (systematic review AND qualitative) OR evidence synthesis OR realist synthesis OR (qualitative AND synthesis) OR meta-synthesis* OR metasynthesis OR meta synthesis* OR meta-ethnograph* OR meta ethnograph* OR metaethnograph* OR meta-study OR meta study OR meta study. Combined with either: AND (self care OR self management) AND Back pain AND chronic pain
MEDLINE	• Same search terms as CINAHL
AMED	• Same search terms as CINAHL

The search did not locate any systematic reviews that explored patient or physiotherapist experiences of self-management of LBP. Within the literature there are some quantitative systematic reviews that focus on self-management of chronic musculoskeletal pain which are discussed in chapter 1. Although the systematic reviews provide valuable evidence for patient care, their focus was randomised control trials, and self-management programmes over a set period of time, rather than the experience of self-management itself. A qualitative approach seeking experiences and opinions will gain a more in depth insight into self-management practices.

One study was located that included both patient and healthcare professional views. A qualitative systematic review by Parsons *et al.* (2007) included fifteen studies of both general practitioners and people with chronic musculoskeletal pain exploring beliefs and expectations about chronic musculoskeletal pain on the process of care. Reviewing both patient and professional views allowed for conflicts and similarities to be revealed. In the context of a quantitative programme or intervention these issues may not have been highlighted. The requirement for on-going support for people to help people manage their chronic pain was found. However, this review focused on general practitioners and although on going support was highlighted as required for management, what this entails or how to support this required further exploration.

A recent search for systematic reviews between 2013 and 2014 revealed four qualitative systematic reviews exploring the experience of chronic LBP (Froud *et al.* 2014; Bunzli *et al.* 2013; MacNeela *et al.* 2013; Snelgrove & Liossi, 2013). Each of these studies focused on the experience of LBP from the perspective of people living with this. Froud *et al.* (2014) specifically aimed to explore the impact of chronic LBP on people's lives and to utilise this to inform future outcome measures to represent the biopsychosocial experience of LBP. Both Bunzli *et al.* (2013) and Snelgrove and Liossi (2013) aimed to explore the experiences of LBP, with the latter aiming for the synthesised qualitative research to inform LBP management. Bunzli *et al.* (2013) recognise the inadequacy of a biomedical approach to LBP and aimed to provide healthcare professionals with a deeper understanding of the multidimensional LBP experience. MacNeela *et al.* (2013) aimed to explore the subjective meaning of LBP from the patient perspective, excluding articles which also included healthcare professional views. None of the four qualitative synthesis specifically focused on self-management of LBP. Alongside this only studies of people living with LBP were included, healthcare professional experiences were not included.

Each of the four studies highlighted the negative impact LBP can have on daily life, in particular restricting activities and being fearful for recurrence or the impact of this and the stigma that surrounds chronic LBP. Concerns about the future were also highlighted (Bunzli *et al.* 2013; MacNeela *et al.* 2013). A dominance of biomedical beliefs among people with LBP was found in three of the studies (Froud *et al.* 2014; Bunzli *et al.* 2013; Snelgrove and Liossi, 2013). However Snelgrove and Liossi (2013) are the only study that linked this to self-management, finding poorer outcomes with people who are fearful and have biomedical beliefs. Snelgrove and Liossi (2013) recommend education to promote self-management and acknowledge the biomedical approach to self-management is not helping people living with LBP and recommend a biopsychosocial approach to care. This warrants further investigation as self-management does not provide a large focus of this review.

Bunzli *et al.* (2013) excluded qualitative articles related to improving treatment programmes and identifying workplace challenges. These types of articles may have the potential to provide valuable insight into self-management with regards to what is or is not helping people to self-manage, for example a treatment programme. Alongside this 19 out of 25 articles included were in a pain clinic setting. Thus more studies from primary care and outpatient physiotherapy must be explored as this reflects day to day practice.

Both Bunzli *et al.* (2013) and Snelgrove and Liossi (2013) refer to strategies people adopt to manage LBP being physically focused in nature with avoiding activity being frequently discussed. Although Bunzli *et al.* (2013) refer to coping with chronic LBP this does not form a large part of their findings or discussion warranting further investigation. Snelgrove and Liossi (2013) have a slightly greater focus on self-management in their findings and refer to this as a more positive outcome than coping. However discussion of coping dominates, which portrays difficulty and limited success. There is limited discussion of how people become involved with and sustain self-management practices. Alongside this more detail regarding what skills are involved with self-management and the degree of support required for this is needed. Insight from physiotherapists into their perceived role in supporting self-management of LBP and how this is done will enhance the understanding of this area.

In the context of the role of the healthcare professional in self-management, there is limited discussion of this in each of the qualitative synthesis discussed. MacNeela *et al.* (2013) make reference to physiotherapists providing support for self-management, however limited detail is provided regarding this. Although Snelgrove and Liossi (2013) consider the role of the healthcare professional, this is not discussed in the context of self-management. This highlights the need to explore the role of support in self-management of LBP.

Although Froud *et al.* (2014) highlight the wide ranging social and psychological consequences of living with LBP, they refer only briefly to people beginning to accept pain and use strategies to cope with this. Thus the complexity of LBP is emphasised, but further detail is required how people are managing this impact and what self-management is in this context and if it is something that is happening given the difficulties people are reported to be facing. The biopsychosocial nature of LBP and challenges associated with this are presented, however day to day management receives little attention. Similarly, MacNeela *et al.* (2013) provide limited detail regarding self-management of LBP. Within MacNeela *et al.* (2013) qualitative synthesis self-management is associated with learning to live with the pain, with very limited discussion regarding the skills and behaviours associated with this.

The majority of qualitative syntheses provide limited discussion regarding self-management, and although acceptance is referred to briefly there is limited detail regarding this and learning to live with pain and difficulties associated with this dominate the limited discussion (Bunzli *et al.* 2013; Froud *et al.* 2014; MacNeela *et al.* 2013). 'Coping' is viewed in a negative light, with avoidance discussed (Bunzli *et al.* 2013; Snelgrove & Liossi 2013) and Snelgrove and Liossi (2013) classify self-management as being associated with more positive outcomes. Consequently, there is the need to explore what people living with LBP are doing day to day and what is associated with successful and unsuccessful self-management in this context.

The plethora of research emphasising the complexity and challenges associated with LBP highlights the need for exploration of self-management of LBP. Due to self-management requiring active patient responsibility to reduce the impact of LBP on daily life with support if required (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009) it poses the question if people with LBP are able to take responsibility, manage this impact and to explore the role of physiotherapists in the context of support due to their frequent encounters with people living with LBP.

The systematic reviews discussed demonstrate some clear opportunities for investigation due to gaps within the literature. Three of the LBP qualitative synthesis searched for articles up until various points in 2011 (Froud *et al.* 2014; Bunzli *et al.* 2013; MacNeela *et al.* 2013) and one searched until the end of 2012 (Snelgrove & Liossi, 2013). Thus, the proposed qualitative synthesis will search databases until mid 2014, providing an opportunity to include more recent literature. Alongside this, no qualitative synthesis focusing on specifically self-management of LBP from the patient or physiotherapist perspective has been located. Although self-management is referred to in some existing qualitative synthesis (MacNeela *et al.* 2013; Snelgrove & Liossi, 2013) this is not a large focus of the reviews, thus there is the need to explore self-management of LBP in more detail. There needs to be a focus on self-management and how this is viewed in qualitative studies regarding LBP. The experience of LBP is very important, however it is felt specific focus on self-management will enhance understanding of this in the context of LBP. Alongside this, no qualitative systematic reviews were found focusing on physiotherapists' experiences and perspectives regarding self-management of LBP, or even the experience of LBP generally, thus it is necessary to incorporate physiotherapist experiences within a qualitative synthesis.

A qualitative synthesis exploring people living with LBP and physiotherapist experiences of self-management of LBP will add to the current literature in a number of ways. Through gaining an understanding of how self-management is interpreted as a day to day behaviour by people living with

LBP and physiotherapists working with this population will allow development of understanding in this context. Finally, the role of physiotherapists in supporting self-management of LBP has received limited attention in current qualitative synthesis from people living with LBP perspective and no studies have focused on the physiotherapist views, thus presenting a clear gap within the literature to explore.

3.2 Aims

The aims of this qualitative synthesis are thus:

- To utilise qualitative evidence of people who have experienced LBP to gain an understanding of self-management in the context of LBP
- To utilise qualitative evidence of physiotherapists with experience of LBP to gain an understanding of self-management in the context of LBP
- To explore the role of the physiotherapist in self-management of LBP regarding support and education

3.3 Methods

The proposed qualitative synthesis will carry out a search strategy, apply inclusion and exclusion criteria to the studies located, undertake a quality appraisal of applicable studies and use a thematic method of synthesis for the study findings. It is acknowledged there is considerable debate regarding qualitative synthesis (Dixon-Woods *et al.* 2006). However, a qualitative synthesis is felt appropriate for the aims of the study to begin inform practice and highlight areas where further research is required.

3.3.1 Search strategy

A search was carried out on core bibliographic databases: AMED, CINAHL, MEDLINE, Science Citation Index and Social Science Citation Index. No starting date restriction was applied and all databases were searched up to the end of 2012. Pilot searches were carried out on AMED, CINAHL and MEDLINE when deciding on search terms. ‘Backache’, ‘lumbago’, ‘lumbar pain’ and ‘self-improvement’ yielded no relevant results when combined.

Qualitative research can be problematic to locate due to being poorly indexed in electronic databases and it is recommended to be over inclusive with terms using both subject headings and free text (Shaw *et al.* 2004). The qualitative research search terms used both methodological terms and terms often used in qualitative research, such as ‘experience’. The search strategy had three components, which were combined. Du *et al.* (2011) and Miles *et al.* (2011) each used search terms for self-management in their search strategy. ‘Patient education’ was not included as due to focusing on self-management it was felt that if the study were focused on self-management, it would be mentioned in the abstract and current terms would locate this.

Table 3.2 states the search terms used. The search terms were free text terms supplemented by electronic indexing terms when available. A re run of the initial search on the core bibliographic databases was carried out for January 2013 to March 2014 to include any recently published articles. This search yielded further articles to include in the synthesis (Harman *et al.* 2014; Dima *et al.* 2013; MacKichan, Paterson & Britten, 2013). Dima *et al.* (2013) reference list included Snelgrove and Liossi (2009) that met the inclusion criteria for the review. The combined search strategies of the electronic databases up to March 2014 achieved 1714 citations. Table 3.3 and 3.4 detail the number of articles retrieved on each database.

Table 3.2: Search terms for systematic review article search

Population	Back pain, sciatica, chronic pain, musculoskeletal pain, recurrent pain, persistent pain
Issue	Self manag*, self care, self help
Design	Qualitative, focus group, grounded theory, phenomenolog*, ethnograph*, narrative, thematic analysis, content analysis, case stud*, intervie*, semi structured, purpos* sample, theoretical sample, participant observation, action research, attitud*, belie*, expectatio*, perceptio*, experienc*, explor*

Table 3.3: Number of studies located at database search to up to 2012

Database search to 31/12/2012	**Number of references**
CINAHL	415
AMED	63
MEDLINE	552
Web of Science: SCCI	187
Web of Science: Sci exp	266
Total	**1483**

Table 3.4: Number of studies located at database search between 2013-2014

Database search to 01/01/2013-31/03/2014	**Number of references**
CINAHL	47
AMED	35
MEDLINE	40
Web of Science: SCCI	52
Web of Science: Sci exp	57
Total	**231**

Screening the results was carried out in three stages. Firstly duplicate studies were removed, following this, the title and abstract of each reference were screened followed by screening the full text, excluding at each stage studies that did not make the inclusion criteria. The inclusion criteria for the title and abstract screening are given in table 3.5 and full text inclusion criteria in table 3.6. The inclusion criteria for title and abstract screening were used, as it was broader than the final inclusion criteria, to ensure studies relevant to the aims were not missed.

‘Self management’ or a related term such as ‘self-care’ or ‘self-help’ was specified to be included in the title or abstract as it was felt to meet the aims of the review this had to be an area that was discussed as either the focus of the study or within the findings. If this was not discussed in the abstract it was felt emphasis was not on this phenomenon and thus excluded. Oliviera *et al.* (2012) systematic review focusing on self-management also used this approach when searching for articles pertaining to self-management due to lack of consensus of what this is. As self-management is not often explored in this population, the author did not initially want to infer what self-management might be, but rather investigate when it was stated to occur in the studies.

Chronic pain, musculoskeletal pain, persistent pain and recurrent pain were sometimes used in abstracts to describe the conditions of the sample that was the study’s focus. In order to avoid missing potentially relevant articles, for example if ‘musculoskeletal pain’ was discussed but specific details of the condition included were not given, and the inclusion criteria was met; the articles were included for full text review.   Similarly, if it was unclear the age of participants or if studies were qualitative empirical research they were included for full text review. If there were any uncertainties at screening title and abstract the study was included for full text review.

Table 3.5: Title/abstract inclusion and exclusion criteria

Inclusion	**Exclusion**
Studies written in English	Studies not written in English
Population is solely people described as having experience of chronic, recurrent or persistent LBP and/or physiotherapists with experience of managing LBP form part of the population studied	Chronic pain from a malignant cause, spinal cord or cauda equina compression, back pain due to fracture, fibromyalgia or systemic/ inflammatory disorder such as Ankylosing Spondylitis, current pregnancy
'Self management' or related term stated	
Majority of participants aged >18 years	
Qualitative primary research.	

For the title/abstract screening, inclusion criteria were applied in a hierarchy. For example, if the study did not include or potentially include people with LBP or physiotherapists with experience of managing LBP they were excluded before the remaining criteria were assessed. If a study stated LBP was 'persistent' 'recurrent' 'chronic' it was accepted, as variation in how each was defined and specific terms for the timescale was not an important focus.

Table 3.6: Full text inclusion criteria

Inclusion	**Exclusion**
Studies written in English	Studies not written in English
Population is solely people described as having experience of chronic, recurrent or persistent LBP and/or physiotherapists with experience of managing LBP form part of the population studied	Chronic pain from a malignant cause, spinal cord or cauda equina compression, back pain due to fracture, fibromyalgia or systemic/ inflammatory disorder such as Ankylosing Spondylitis, current pregnancy
'Self management' or related term must be the focus of the study or a theme and provide detail relating to this	
Qualitative primary study	
Majority of participants aged >18 years	

Database searching can miss relevant articles (Greenhalgh, 2014). Following the electronic search and screening a hand search of four journals was carried out for all volumes and issues between the years 2000-2012. The journals searched were, *Physiotherapy, Physiotherapy Theory and Practice, Physiotherapy Research International* and *Disability and Rehabilitation.* Figure 3.1 details the process of identification of included studies. The fifty one excluded articles at the full text screen with reasons for the exclusion are detailed in Appendix 2.

3.3.2 Quality appraisal

Quality appraisal is a debated area within qualitative research regarding how to carry it out through to whether it is should be carried out at all (Dixon-Woods *et al.* 2006). Alongside this, there is no one criteria for the assessment of quality in qualitative research and no agreed consensus whether to exclude studies on the basis of quality appraisal (Hannes, 2011; Popay, Rogers & Williams*,* 1998). It is outside of the scope of this review to discuss this debate in detail, however justification for carrying out a quality appraisal with the support of the CASP tool is discussed (Public Health Resource Unit, 2006).

Quality appraisal is recommended by both Hannes (2011) and Centre for Reviews and Dissemination (2009) with CASP being documented as an appropriate tool to consider. Hannes and Macaitis (2012) conducted a review of published papers that synthesised qualitative evidence. The review found a high number of studies placed added value on appraising the methodological quality. The most commonly used appraisal tool was the CASP tool. However, Hannes and Maciatis (2012) review discuss a criticism of the CASP tool due its lack of questions regarding the theoretical aspect of appraisal. Alongside the CASP tool the author was mindful of the qualitative appraisal prompts by Dixon Woods *et al.* (2004).

Parsons *et al.* (2007) and Bunzli *et al.* (2013) qualitative synthesis only excluded studies if the methods were not available to appraise and use the CASP tool to guide appraisal. The proposed review has similarities to these reviews due to their focus on peoples' experiences and chronic pain. Following the appraisal of studies for this review, the decision was made not to exclude any studies on the basis of the results of the quality appraisal. The quality appraisal will allow the reader to see any potential limitations of the study and to ascertain for themselves the impact of this on findings (Hannes, 2011). Excluding studies on the basis of appraisal may lose valuable data that could inform the findings (Thomas & Harden, 2008). Further, due to no consensus regarding when to exclude studies it was felt to be the most appropriate option.

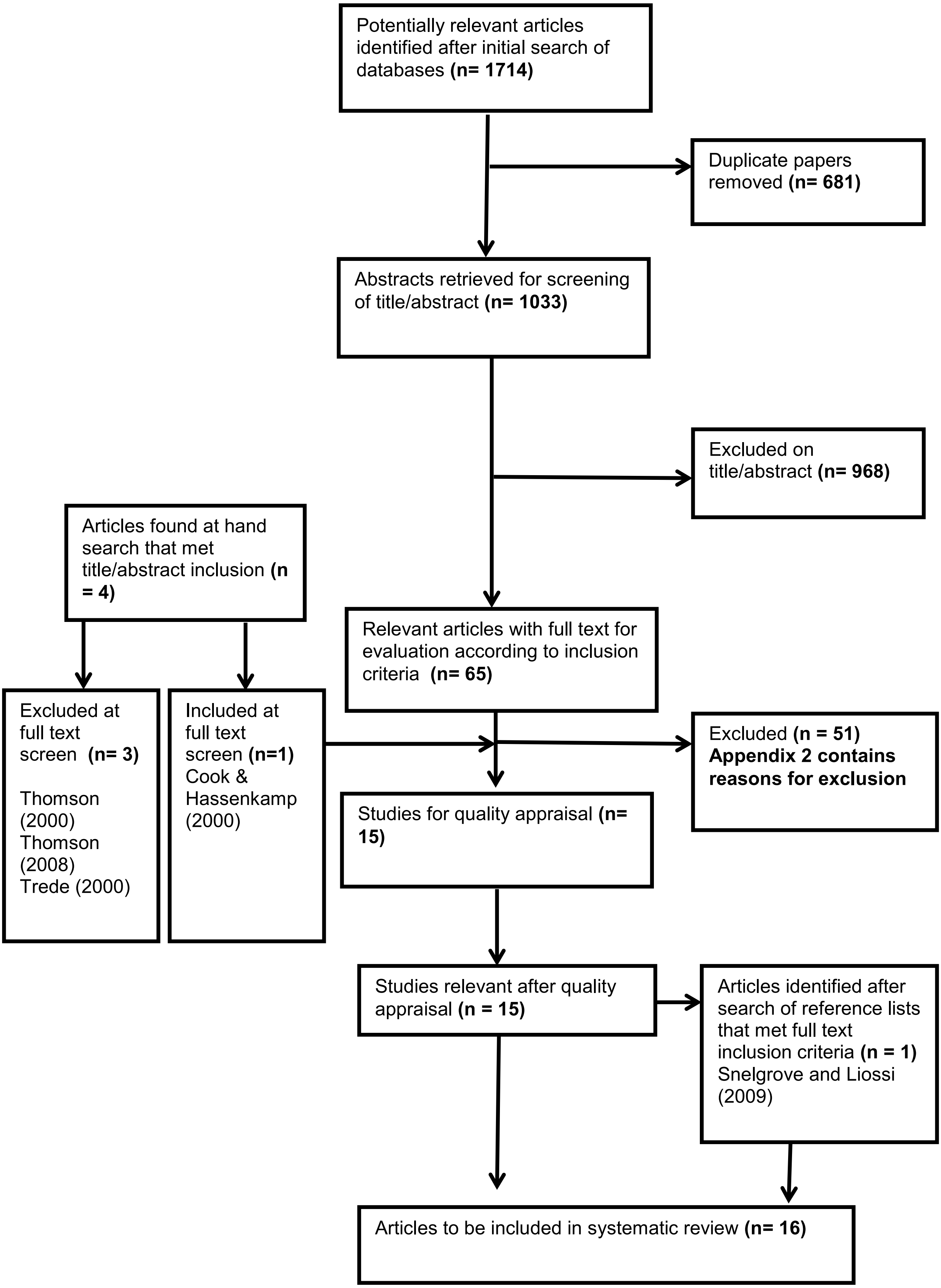


Figure 3.1: Flow chart of article selection

3.3.3 Summary of included studies

Table 3.7 provides an overview of the studies included in this review.

Research aims and focus: Nine of the included articles main focus was self-management of LBP (Harman *et al.* 2014; Mackichan, Paterson and Britten, 2013; Briggs *et al.* 2012; Crowe *et al.* 2010a; Tvieto *et al.* 2010; Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Benjamission *et al.* 2007; Morris, 2004). The focus regarding self-management varied. Some studies focused on support for self-management in varying contexts including physiotherapy (Cooper, Smith and Hancock, 2009), general practitioner support (Mackichan, Paterson and Britten, 2013), access to healthcare (Briggs *et al.* 2012) and the role of a self-management website (Zuffrey and Schulz, 2009). Harman *et al.* (2014), Zuffrey and Schulz (2009) and Morris (2004) were evaluating an intervention with the remaining two studies focusing on self-management strategies (Crowe *et al.* 2010) and response to relapse of LBP (Benjamission *et al.* 2007). The other articles that were included had self-management as a theme, but not the overall focus. These articles explored the experience of living with LBP (Snelgrove & Liossi, 2009; Campbell & Cramb, 2008), patient beliefs regarding treatment and management of LBP (Dima *et al.* 2013; Liddle, Baxter and Gracey, 2007; May, 2007), evaluation of an exercise programme (Cook & Hassenkamp, 2000) and development of a self-management programme (Tvieto *et al.* 2010) with one study specifically exploring physiotherapist experiences and their influence on management of LBP (Jeffrey and Foster, 2012).

Sampling: Participants with experience of LBP generally had some experience of healthcare, with recruitment taking place through physiotherapy clinics (Crowe *et al.* 2010; Cooper, Smith & Hancock, 2009; Benjamission *et al.* 2007; May, 2007; Morris, 2004; Cook & Hassenkamp, 2000), GP lists (Dima *et al.* 2013; Mackichan, Paterson & Britten, 2013) and a pain clinic (Snelgrove & Liossi, 2009). One study specifically required participants with no experience of secondary or tertiary care (Campbell & Cramb, 2008).

Table 3.7: Characteristics of the included studies in the qualitative synthesis

Characteristics of articles included in the qualitative synthesis					
Study	**Aims**	**Sample**	**Inclusion criteria**	**Data Collection**	**Data Analysis**
Benjaminsson et al. (2007)	‘To explore and describe how patients with recurrent LBP perceive and respond to the recurrence of pain’ (p.640)	17 people with recurrent LBP Recruited from four physiotherapy clinics in Stockholm	One relapse of LBP in the last year after a pain free period of LBP	Semi structured interviews	Phenomenographic method
Briggs et al. (2012) *	‘To explore barriers experienced by consumers in rural settings in Western Australia to accessing information and services and implementing effective self-management behaviours for CLBP’ (p.1)	14 consumers with a history of chronic LBP Recruited from three rural sites in Western Australia	Chronic LBP for more than three months	Semi structured interviews	Thematic analysis
Campbell and Cramb (2008) *	‘Explore how people live with chronic pain and examine meanings ascribed by individuals who have not engaged with secondary or tertiary care facilities’ (p.384)	12 participants suffering with chronic pain, predominantly LBP Recruited through a snowball method of researcher asking colleagues if they knew anyone with chronic pain who may participate	Experienced pain for longer than six months	Semi structured interviews	Burnard’s method of thematic analysis
Cook and Hassenkamp (2000)	‘To gain an in depth understanding of individual patients’ experiences of chronic LBP and active rehabilitation’ (p.61)	7 people with chronic LBP Recruited from a physiotherapy department	People with LBP who had attended a back rehabilitation programme in the last six months	Semi structured interviews	Constant comparative method
Cooper, Smith and Hancock (2009)	“Explore chronic LBP patients’ perceptions of self management following physiotherapy.” (p.44)	25 people with experience of LBP Recruited from an NHS trust	Attended two physiotherapy sessions for treatment of recurrent or non specific LBP. Discharged up to six months previously.	Semi structured interviews	Framework Method of data analysis
Crowe et al. (2010a)	‘Explore the self-management strategies people with chronic LBP how their healthcare professionals perceived their role in self-management’ (p.1479)	64 people with experience of LBP 22 healthcare professionals: ‘majority physiotherapists’ Recruited by advertisement and from physiotherapy clinic in New Zealand	People 18 years or over with experience of chronic non specific LBP Nominated healthcare professionals	Semi structured interviews	Content analysis
Dima et al. (2013) *	‘To explore patient preferences and to identify patient’s beliefs about LBP treatments’ (p.e490)	75 adults with LBP Recruited through lists of patients who had seen their family doctor or complementary therapist or chronic pain	People 18 years or over with a six week history of LBP not caused by fracture, infection, inflammatory disorder or nerve	Focus groups	Thematic analysis

		support groups South West England	root compression		
Harman et al. (2014) *	'To describe the approach used by a physiotherapist who led a rehabilitation programme for injured members of the military with chronic LBP designed to enhance self-efficacy and self-management skills' (p.82)	1 physiotherapist	Physiotherapist who designed the rehabilitation programme	In depth interview	Thematic analysis
Jeffrey and Foster (2012) *	'Understand how the personal experiences and feelings of physical therapists might influence their decision making when treating patients with non specific LBP'	11 Physiotherapists Recruited following responses to a survey. Both NHS and private practitioners.	Physiotherapists who had responded to the survey and had treat someone with chronic non specific LBP in the last six months	Semi structured interviews	Phenomenological hermeneutics
Liddle, Baxter and Gracey (2007)	"To explore the experiences, opinions and treatment expectations of chronic LBP patients to identify what treatment components they consider to be most value" (p.1899)	18 people with experience of LBP Recruited from a university	Currently or within last month had episode of non specific LBP lasting three months or more. Previously received exercise or advice from a healthcare professional.	Focus group and non participant observation	Thematic analysis with assistance from Nvivo
MacKichan, Paterson and Britten (2013) *	'To describe patients' experience of self-care for long term back pain and their views on provision of support for self-care' (p.212)	23 adults with persistent back pain Recruited through purposefully selecting people who had responded to a postal survey South West England	People with long term LBP who had responded to a postal survey regarding GP visits and control over LBP	In depth interviews	Constant comparative analysis
May (2007)	Exploration of patients' attitudes and perspectives about back pain and its management.	34 people with experience of LBP Recruited from two physiotherapy departments within one town in the UK	Received physiotherapy treatment for non specific LBP in the previous year.	Semi structured interviews	Framework Method of data analysis
Morris (2004)	Experience of attending back rehabilitation class and self management perceptions following this.	6 people with LBP 2 physiotherapists Recruited from an NHS trust	Attended back rehabilitation class under study.	Semi structured interviews and non participant observation	Thematic content analysis
Snelgrove and Liossi (2009)	'Extend existing knowledge by providing a detailed and contextualised understanding of the meaning of chronic LBP for participants with long standing experiences of chronic pain' (p.735)	10 adults Recruited from a chronic pain clinic	On waiting list of a chronic pain clinic, had experienced significant chronic LBP for at least four years that was unrelieved by previous medical and surgical treatments	Semi structured interviews	Interpretative Phenomenological Analysis
Tvieto et al. (2010)	'Identify workplace challenges and self management strategies reported	38 workers with LBP Recruited via advertisement via email or	Full or part time workers between 18-65, with recurrent	Focus groups	Grounded theory approach

	by workers remaining at work despite recurrent or persistent LBP' (p.2035)	local newspaper	LBP in prior 12 months		
Zuffrey and Schulz (2009) *	'To examine the role of a patient centred website on patients chronic LBP self-management attitudes and behaviours'	18 adults with chronic LBP Contacted via mal	Individuals who were suffering with chronic LBP who were registered with the website and living in the Italian part of Switzerland	Semi structured interviews	Constant comparative analysis with support from ATLAS software

* These studies have not been included in the extant chronic LBP experiences qualitative synthesis discussed in the 3.1 introduction

The remainder of studies recruited participants through advertisements (Tvieto *et al.* 2010; Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007). Four studies included physiotherapists, with two studies having physiotherapists as the sole population. One study recruited physiotherapists from both the National Health Service and private practice (Jeffrey and Foster, 2012) and one study does not state where the physiotherapist was recruited (Harman *et al.* 2014). The remaining studies have physiotherapists as part of their population (Crowe *et al.* 2010a; Morris, 2004).

The included studies often detailed the age of participants; with the studies that provided more detail about the various ages of participants stated over half of their included population were over fifty years of age (Mackichan, Paterson & Britten, 2013; Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007; May, 2007; Morris, 2004). Alongside age, gender of participants was always provided. Mackichan, Paterson and Britten (2013) are the only study where there are more males than females included in the sample. The length of time people had LBP was frequently stated and work status referred to in some studies.

Data collection: Semi structured interviews were the most frequently used method of data collection (Mackichan, Paterson & Britten, 2013; Briggs *et al.* 2012; Jeffrey & Foster, 2012; Crowe *et al.* 2010a; Cooper, Smith & Hancock, 2009; Snelgrove & Liossi 2009; Zuffrey & Schulz, 2009; Campbell & Cramb, 2008; Benjamission *et al.* 2007; May, 2007; Morris, 2004; Cook & Hassenkamp, 2000). One study used an in depth interview (Harman *et al.* 2014) with the remainder of the studies utilising focus groups (Dima *et al.* 2013; Tvieto *et al.* 2010; Liddle, Baxter & Gracey, 2007).

Data analysis: Thematic analysis was the most frequently employed method of analysis (Harman *et al.* 2014; Dima *et al.* 2013; Briggs *et al.* 2012; Campbell & Cramb, 2008; Liddle, Baxter & Gracey, 2007; Morris, 2004) followed by the constant comparative approach (Mackichan, Paterson and Britten, 2013, Zuffrey & Schulz, 2009; Cook & Hassenkamp, 2000). Other methods included the Framework Approach (Cooper, Smith & Hancock, 2009; May, 2007), Phenomenology (Jeffrey & Foster, 2012; Benjamission *et al.* 2007), Interpretative Phenomenological Analysis (Snelgrove and Liossi, 2009), Grounded Theory (Tvieto *et al.* 2010) and content analysis (Crowe *et al.* 2010a).

There were some decisions made among the supervisory team regarding the inclusion of some studies into the qualitative synthesis. One study stated their sample was people with experience of chronic pain and the majority of their sample had LBP, with no further detail provided (Campell & Cramb, 2008). It was decided amongst the research team that this study could be included into the review as its focus was relevant to LBP and this made up the majority of the sample and was the focus of discussion. The inclusion criteria stated that the majority of participants must be over eighteen years of age. One study sample stated the youngest age was fifteen (Benjamission *et al*. 2007). It was decided to include this study as its focus was not on adolescents with LBP and the focus was appropriate to the aims of the review. Mackichan, Paterson and Britten (2013) stated their focus to be 'self-care' however they give very little detail of what they view self-care to be. As self-management and self-care can be used interchangeably it was decided this study would be appropriate for inclusion into the review. A study by Dima *et al.* (2013) stated 'persistent LBP' as a category with length of time living with LBP between six weeks and one year. It is unknown the breakdown of experience within this category. The following categories are termed 'chronic/recurrent' LBP for more than one year, which is 79% of the sample. The decision was made to include this study with the qualitative synthesis as the majority of the population was experiencing chronic, recurrent or persistent LBP and the study were relevant to the aims of the synthesis.

3.3.4 Data extraction and Synthesis Approach

The data extracted from articles included in the synthesis was aims, sampling method, sample characteristics, data collection, data analysis methods and findings relevant to the aim of the qualitative synthesis. The data extraction sheet used was a template by Lloyd-Jones *et al.* (2010). The findings of the studies will be discussed in more detail during the synthesis process.

It must be noted that the studies included in the review have different research questions. Ideally, the synthesis would have included studies whose sole aim was to explore ‘self management’ of LBP and in which data associated to this area were not only mentioned as one or two themes in the findings. In order to not exclude potentially relevant data, studies were included in which ‘self-management’ was clearly identified and was prominent in the study findings, even if not the principal focus of the research.

The synthesis approach adopted by Bunzli *et al.* (2013) was used. This approach is adapted from Sandelowski and Barroso (2007) approach to synthesis of qualitative research. The stages involve initial coding of the findings from the included studies, grouping these codes and analysis of the grouped findings to present an overview that integrates the included study findings (Bunzli *et al.* 2013).

As per Bunzli *et al.* (2013) initial coding involved reading the extracted findings and allocating appropriate terms. A list of codes was developed following reading of the first four studies and this applied to the remaining articles. Any new codes were added as this process developed. Findings from the studies related to specific codes were added to a table. Where possible the findings were detailed as provided in the articles and summarised if there were large amounts of information, however still reflecting the original content. Following initial coding similar codes were grouped together to develop themes and reading of the findings allowed development of an overview of the findings and higher order themes. This approach was chosen as it had previously been utilised in a synthesis exploring experiences of chronic LBP and the synthesis aimed to produce an overview that kept true to the findings of the studies, not further develop themes as in meta-ethnography. However, it is important to note that the synthesis is not a summary; it is a presentation of integrated findings from the studies (Sandelowski & Barroso, 2007). Everything under 'findings' was included and coded. Thomas & Harden (2008) qualitative synthesis advocates this to not discount any relevant points, however discourage coding direct quotes from participants as it is felt this may change the interpretation that was already presented within the studies, thus author interpretations were coded. These were explored to verify these were grounded in the data.

3.4 Findings

The development of the final themes are illustrated in table 3.8.

Table 3.8: Development of synthesis themes

Theme development		
Codes	**Categories**	**Themes**
Understanding self management, confidence, control, self efficacy, fear, lack of understanding, active involvement, on-going	Understanding and control of low back pain	Self-management as controlling low back pain: perceived ability and challenges
Exercise, individualised, restricting activity/ staying within limits, getting on with it, effectiveness of strategies, pacing, own experience, other strategies, response to pain, medication, not engaging in strategies, expectations, positive thinking	Strategies and self management of low back pain: Differing priorities	
Acceptance, searching for a cure, time and experience	Acceptance of low back pain is necessary for self management	
Response to pain, independence, short term, poor experience with healthcare, role of the healthcare professional, future support, role of family/peer support	Seeking support or independence	Support in the context of self-management
Mechanism of support, family	Mode of support	

3.4.1 Self-Management as Controlling Low Back Pain: Perceived Ability and Challenges

3.4.1.1 Understanding and Control of Low Back Pain

Self-management is described within studies as something that is on-going or a process in which a patient is engaged (Harman *et al.* 2014; Mackichan, Paterson & Britten, 2013; Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Benjaminsson *et al.* 2007; Liddle, Baxter & Gracey, 2007; Cook & Hassenkamp, 2000). Self-management as an active process is portrayed in some studies by being termed 'self-managing' or managing (Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007). Frequently associated with these terms is the person seen to be doing something to reduce the pain experienced. However, people's ability to be able to be involved in this on-going process must be considered, alongside questioning if people wanted to be involved, as some participants felt self-management as imposed upon them (MacKichan, Paterson & Britten, 2013) or were not at a stage where they wanted to partake in this, whether this be due to acceptance (Benjamission *et al.* 2007) or time in daily life (Briggs *et al* 2012).

When self-management was discussed in some studies, people who were able to manage their LBP were felt to have control over their pain (Campbell and Cramb, 2008; Benjaminsson *et al.* 2007; Liddle, Baxter and Gracey, 2007; May, 2007), a level of self-efficacy (Benjamission *et al*. 2007) and feel this to be an achievement, having this control (Campbell & Cramb, 2008) as well as having confidence in their ability to do this (Cooper, Smith and Hancock, 2009; Zuffrey & Schulz, 2009; Benjaminsson *et al.* 2007; Liddle, Baxter and Gracey, 2007). Physiotherapists also felt people with back pain needed to have an ability to manage and have control over symptoms (Jeffrey and Foster 2012) and to take responsibility, while acknowledging this may require some support (Harman *et al.* 2014; Jeffrey & Foster, 2012). However, Campbell and Cramb (2008, p. 387) describe issues with managing pain as a ‘fine balance between actively managing pain and passively containing it’. They note when people’s daily lives and wellbeing is affected by pain they are no longer in control, and often will try anything to reduce the impact of pain. Alongside this control can be difficult to achieve (Dima *et al.* 2013). This contrast to control, and doing anything to reduce pain is reflected in some of the other studies regarding people doing whatever they can with the aim to reduce pain, however this may not always be successful (Crowe *et al.* 2010; Snelgrove & Liossi, 2009). Table 3.9 provides some examples from primary studies findings that informed this theme.

Control was linked to understanding of LBP; an understanding is necessary to be able to control living with LBP (Jeffrey and Foster, 2012; Zuffrey and Schulz, 2009; May, 2007). Understanding of LBP from a patient perspective contributes to self-management (Mackichan, Paterson & Britten, 2013; Cooper, Smith and Hancock, 2009; Benjaminsson *et al.* 2007; Liddle, Baxter & Gracey, 2007; May, 2007). In particular, the nature of LBP regarding recurrence (Bejaminission *et al.* 2007; May, 2007) and having a diagnosis was cited as important due to feeling able to take action through this understanding (Mackichan, Paterson & Britten, 2013; Zuffrey & Schulz, 2009; Benjamission *et al.* 2007). Tvieto *et al.* (2010) highlight a challenge within the workplace of no one else understanding the pain and how the person is feeling. Alongside this, when discussing difficulty managing and what could be perceived as not being in control, people were fearful of activity due to an increase in pain and demonstrated avoidance behaviour (Mackichan, Paterson and Britten, 2013; Benjaminission *et al.* 2007; Liddle, Baxter and Gracey, 2007). However those viewed as being able to manage were able to carry out activity without being fearful of pain (Harman *et al.* 2014; Benjaminission *et al.* 2007; Liddle, Baxter and Gracey, 2007). Physiotherapists felt educating people about exercise (Harman *et al.* 2014; Jeffrey and Foster, 2012), with one study doing this through individualised treatment planning and behaviour change principles (Harman *et al.* 2014) were a way to achieve control over symptoms. Similarly to patients, physiotherapists felt understanding of the nature of their pain in a mechanical sense alongside how to reduce this pain was important to gain control (Jeffrey and Foster, 2012).

Table 3.9: Examples of findings from primary studies informing ‘understanding and control of LBP’

Study	**Example of findings informing ‘Understanding and control of LBP’**
Benjamission *et al.* (2007, p. 643)	“Individuals have high self efficacy in their ability to cope with pain in everyday life”
Campbell & Cramb (2008, p 387)	“Feeling in control helped them to cope with their pain” “Some participants took pride in their ability to control and cope with pain”
Cooper, Smith & Hancock (2009, p.47)	“The physiotherapist helping them understand their back pain”
Dima *et al.* (2013, p.e492)	“Controlling pain is difficult to learn”
Jeffrey & Foster (2012, p.272)	“The physical therapists believed if patients understood they would feel they had more control over it”
May (2007, p131)	“For some participants the act of seeking medical help was tied up with seeking greater self-management of their problem – this gained independence and control over a problem they didn’t expect a cure”
MacKichan, Paterson & Britten (2013, p.215)	“Diagnosis played a key role in using self care – gave individuals greater confidence in caring for their back”
Zuffrey & Schulz (2009, p.29)	“Experienced self-managers had a high level of awareness…they had usually been suffering from LBP for many years, were familiar with medical language, had a clear idea about diagnosis and knew they had to play an active role in dealing with their health problem”

3.4.1.2 Strategies and Self-Management of Low Back Pain: Differing Priorities

People were classed as being involved with the self-management of their condition if they were carrying out strategies (Crowe et al. 2010a; Cooper, Smith and Hancock, 2009; Liddle, Baxter and Gracey, 2007). Strategies were referred to in the wider context of being there for people to feel prepared if pain were to increase (Crowe *et al.* 2010; Tvieto *et al.* 2010; Zuffrey and Schulz, 2009; Benjaminsson *et al.* 2007; May, 2007). Strategies needed to be individualised so they were realistic and suited the individuals’ requirements (Dima *et al.* 2013; Cooper, Smith and Hancock, 2009; Zuffrey and Schulz, 2009; Liddle, Baxter and Gracey, 2007; May, 2007).

Strategies are used to relieve pain and to help resolve the problem (Crowe *et al.* 2010a; May, 2007). However, there was a sense of frustration among some participants that strategies did not help in the sense of achieving this (Crowe *et al.* 2010; Snelgrove and Liossi, 2009; May, 2007). Two studies discussed people integrating strategies into their day (Mackichan, Paterson and Britten, 2013; Tvieto *et al.* 2010) however due to time and other commitments this could be difficult to achieve (Briggs *et al.* 2012; Benjaminsson *et al.* 2007). People chose not to engage in strategies due to the demands of daily life, such as family and work (Mackichan, Paterson & Britten, 2013; Briggs *et al.* 2012; Benjaminsson *et al.* 2007) or feeling as if strategies were something that healthcare professionals felt were best rather than their own choice (Mackichan, Paterson & Britten, 2013) and not wanting to change behaviour (Benjaminisson *et al.* 2007). Snelgrove and Liossi (2009) comment upon the physical focus of strategies for LBP, whilst Tvieto *et al.* (2010) discuss strategies in the wider context of the workplace, not solely focusing on doing a particular activity to relieve pain. There is a range of approaches to strategies ranging from modifying activities and understanding limitations (Tvieto *et al.* 2010; Benjamission *et al.* 2007; Liddle, Baxter & Gracey, 2007) to the complete avoidance of anything that may aggravate pain (MacKichan, Paterson & Birtten, 2013; Snelgrove & Liossi, 2009; May, 2007).

Physiotherapists found it difficult to help people who were viewed as having passive attitudes to self-manage (Jeffery and Foster, 2012). One study involving one physiotherapist emphasised the importance of integrating strategies such as movement into daily life such as work (Harman *et al.* 2014). Alongside this, the importance of patients understanding the reasoning for strategies such as exercise, in order to facilitate this understanding the physiotherapist involved the patient in the discussion making them verbalise and discuss the benefits of engaging in a programme (Harman *et al.* 2014). This approach contrasts with Jeffrey and Foster

(2012) who although discuss empowering the patient, appear to provide instructions rather than encourage understanding.

Exercise is predominantly discussed under the themes of self-management. Often when participants are described as ‘self-managing’ or engaged in self-management strategies this is related to or supported by quotations related to carrying out exercise (Mackichan, Paterson and Britten, 2013; Crowe *et al.* 2010a; Cooper, Smith and Hancock, 2009; Benjaminsson *et al.* 2007; Liddle, Baxter and Gracey, 2007; May, 2007; Morris, 2004; Cook & Hassenkamp, 2000). Exercise was the most commonly reported strategy; this was discussed by both people with experience of LBP and physiotherapists, with this dominating the discussion regarding strategies (Dima *et al.* 2013; Mackichan, Paterson and Britten, 2013; Briggs *et al.* 2012; Jeffrey and Foster, 2012; Crowe *et al.* 2010a; Cooper, Smith and Hancock, 2009; Liddle, Baxter and Gracey, 2007; May, 2007).

Strategies, in particular exercises are used when pain increases and reduced as pain became under control (Dima *et al.* 2013; Cooper, Smith & Hancock, 2009; Benjaminsson *et* al. 2007, Liddle, Baxter and Gracey, 2007; May, 2007). Exercise was cited by people who had suffered with LBP as having many benefits for the management of LBP (Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007). People stated it could provide temporary relief from pain (Dima *et al*. 2013) or ease pain (Benjaminsson *et al.* 2007; Liddle, Baxter and Gracey, 2007; May, 2007), prevent relapse (Benjaminsson *et al.* 2007) and enhance core strength (Crowe *et al.* 2010). Physiotherapists felt that the main role of exercise was to improve core strength (Crowe *et al.* 2010) and has physical and psychological benefits which can help people to regain confidence and reduce problems associated with inactivity (Jeffrey & Foster, 2012). Harman *et al.* (2014) study that focused on one physiotherapist reported the integration of exercise into the workday, trying to find solutions and actively trying to reduce fear among participants associated with exercise.

Alongside potential uses of exercise, there were some concerns among patients regarding exercise. Some people felt exercise may cause injury to the self (Dima *et al.* 2013; Mackichan, Paterson & Britten, 2013; Cook and Hassenkamp, 2000) and people were uncertain of how much their back could cope with and had worries about exercise causing pain (Benjaminsson *et al.* 2007) as well as being unsure of the risks of exercise (Mackichan, Paterson & Britten, 2013). Those people avoiding activity due to fear of pain were often classed as not being involved with self-management (Mackichan, Paterson and Britten, 2013; Benjamission *et al.* 2007).

Medication was a frequently mentioned strategy among people with experience of LBP and was used during severe pain or a flare up (Tvieto et al. 2010, Crowe et al. 2010a; Zuffrey & Schulz, 2009) and in some cases as part of a routine (Dima et al. 2013; Mackichan, Paterson and Britten, 2013; Briggs et al. 2012; Snelgrove and Liossi, 2009). Medication raised the most concerns among people with experience of LBP, in particular worries about dependency (Dima et al. 2013; Snelgrove and Liossi, 2009; Campbell and Cramb, 2008) and dislike of taking medication (Crowe et al. 2010; Campbell and Cramb, 2008). This was there for reassurance (Tvieto *et al.* 2010) however people felt better if they had managed their pain without medication (Campbell & Cramb, 2008).

Pacing was used as a self-management strategy (Mackichan, Paterson and Britten, 2013; Crowe *et al.* 2010; Tvieto *et al.* 2010; May, 2007; Cook and Hassenkamp, 2000). However, Tvieto *et al.* (2010) is the only study who give examples of pacing integrated into daily life such as segmenting the work day and prioritising tasks. Pacing could sometimes present difficulties with how much a person could do (Benjaminsson *et al.* 2007) and may not be realistic in daily life in some instances with regards to work (Tvieto *et al.* 2010; Benjaminisson *et al.* 2007) and integrating into life (Briggs *et al.* 2012). Modifying or restricting activities to avoid a flare up was regularly discussed (Mackichan, Paterson & Britten, 2013; Tvieto *et al.* 2010; Liddle, Baxter & Gracey, 2007). However, some people had the approach of ignoring the pain and a sense of putting up with it (Crowe *et al.* 2010; Campbell & Cramb, 2008; Benjaminsson *et al.* 2007). At times an almost defiance to the pain prevailed, with people having the view of not allowing pain to impact on their lives (Campbell & Cramb, 2008).

Tvieto *et al.* (2010) considered cognitive strategies, with positive thinking being something participants reported and keeping in mind a goal following an achievement of a day at work. There were a number of other strategies discussed within the literature however explanatory value around these was limited. Some of the strategies included heat (Mackichan, Paterson and Britten, 2013; Crowe *et al.* 2010a; Cooper, Smith and Hancock, 2009; Snelgrove and Liossi, 2009; May, 2007), posture and ergonomics (Dima *et al.* 2013; Cooper, Smith and Hancock, 2009; Snelgrove and Liossi, 2009; May, 2007), own exercises (Cooper, Smith and Hancock, 2009; May, 2007), distraction (Dima *et al.* 2013; Mackichan, Paterson and Britten, 2013; Tvieto *et al.* 2010), rest (Mackichan, Paterson and Britten, 2013; Cooper, Smith and Hancock, 2009), back supports (Crowe *et al.* 2010a; Cooper, Smith and Hancock, 2009) and goal setting (Harman *et al.* 2014; Dima *et al.* 2013). Frequently people adopting their own personal strategies that worked for them through both healthcare professional support and part of the journey of living with LBP (MacKichan, Paterson & Britten, 2013; Tvieto *et al.* 2010; Cooper, Smith & Hancock, 2009; May, 2007). Consideration of the wider context was achieved by Tveito *et al.* (2010) whose participants reported the value of effectively communicating pain among work colleagues for support and managing that work day. Table 3.10 provides some examples of data from studies informing this theme.

Table 3.10: Examples from findings of primary studies informing 'Strategies and Self-Management of Low Back Pain: Differing Priorities'

Study	**Example of findings informing 'Relationship to Strategies: Feeling Prepared or Avoiding Pain'**
Briggs *et al.* (2012, p. 7)	"Competing lifestyle demands, such as work and family commitments, were cited as substantial barriers to participants adopting a regular self-management routine"
Cooper, Smith & Hancock (2009, p.46)	"A smaller group of participants who described themselves as self-managing but were clear in their intent not to consult a physiotherapist in the future. For some, this was due to them knowing which exercises to do"
Crowe *et al.* (2010a, p.1482)	"Many participants had a sense of resignation and frustration about the effectiveness of strategies for relief of their chronic low back pain"
May (2007, p.132)	"Although many of these patients found exercises an important part of the management of their problem they admitted that as the pain decreased compliance with an exercise programme decreased"
Tvieto *et al.* (2010, p.2040)	"Segmenting the workday by breaking the job into smaller, more manageable bits helped some participants"

3.4.1.3 Acceptance of Low Back Pain is Necessary for Self-Management

When self-management was discussed the focus was often people having accepted pain as part of their lives and wanted to learn to live with this (Zuffrey & Schulz, 2009; Campbell & Cramb, 2008; May, 2007). However people could also feel cast aside by the healthcare system and distressed at having to live with pain (Dima *et al.* 2013), with accepting pain a difficult thing to achieve (May, 2007). Acceptance could also be related to accepting that some involvement in management is needed (Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007; May, 2007).

There were differences in patient expectations among some of the studies. There is a divide between patients looking for a cure as opposed to wanting support from healthcare professionals and taking some responsibility for the management of their LBP (Jeffrey & Foster, 2012; Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007). People that were looking for a cure did not want to be actively involved with management and were seeking passive treatments or seeking a cure to their problem (Mackichan, Paterson & Britten, 2013; Jeffrey and Foster, 2012; Cooper, Smith and Hancock, 2009; Zuffrey and Schulz, 2009). Seeking support from healthcare professionals was used to try to achieve the goal of curing symptoms (Jeffery & Foster 2012; Cooper, Smith & Hancock, 2009). One study describes those looking for a cure as ‘not self-managing’ (Cooper, Smith & Hancock, 2009) or it is alternatively discussed as those who were ‘managing’ had accepted a cure was unlikely with on-going management being required (Liddle, Baxter & Gracey, 2007; May, 2007). It is proposed that time and experience may contribute to people wanting to be involved with self-management of their problem with a transition taking place, moving from expecting a cure to managing symptoms (Mackichan, Paterson & Britten, 2013; Liddle, Baxter and Gracey, 2007; May 2007).

Three studies classified types of people in relation to self-managing. Those who were unsure of the cause of their pain and searching for a solution were seen as not self-managing (Zuffrey and Schulz, 2009; Cooper, Smith and Hancock, 2009; Benjaminsson *et al.* 2007) whereas those who wanted to be involved with their management and sought support for specific reasons to facilitate this were viewed as self-managing (Zuffrey and Schulz, 2009; Cooper, Smith and Hancock, 2009; Benjaminsson *et al.* 2007).

3.4.2 Support in the Context of Self-Management

3.4.2.1 Mode of support

Within the studies there are various mechanisms of support that people use to supplement self-management. As already discussed, healthcare professional support is valued by some people. The use of exercise classes to support self-management was used, however more focus on the biopsychosocial impact of pain rather than biomechanical was advised (Morris, 2004; Cook & Hassenkamp, 2000). One study used an exercise programme with a behaviour change approach (Harman *et al.* 2014) and another used online support through self-help materials and talking to other sufferers (Zuffrey and Schulz, 2009) social networks, work and family (Mackichan, Paterson & Britten, 2013; Tvieto *et al.* 2010) and self-help materials such as books (Mackichan, Paterson & Britten, 2013) were all used. Tvieto *et al.* (2010) discuss the value of support at work and from co workers to allow successful self-management however in contrast to this those finding self-management strategies difficult were cited in one study as not having support from friends and family (Benjamission *et al.* 2007). The self-management website provided support from other users that participants valued (Zuffrey & Schulz, 2009).

3.4.2.2 Seeking Support or Independence

People looking for support were reported to appreciate that self-management is on going and long term (Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007; May, 2007). Seeking support from healthcare professionals was generally viewed as required when participants experienced an increase in their symptoms (Jeffrey & Foster, 2012; Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007). The need for reassurance from healthcare providers prevailed (Dima *et al.* 2013; Jeffrery & Foster, 2012; Tvieto *et al.* 2010; Cooper, Smith & Hancock, 2009, Benjaminsson *et al.* 2007; Liddle, Baxter and Gracey, 2007) with the availability of support from healthcare professionals felt necessary by some participants (Mackichan, Paterson &

Britten, 2013; Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007). People valued being able to consult healthcare professionals to further develop understanding (Zuffrey & Schulz, 2009) or to review and check self-management practices (Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007; Cook & Hassenkamp, 2000). Healthcare professionals were there to provide support for the person to maintain or supplement self-management (Dima *et al.* 2013; Crowe *et al.* 2010; Zuffrey & Schulz, 2009; Liddle, Baxter & Gracey, 2007). Providing treatment to reduce pain was seen as contributing to self-management in one study, due to the reduction in pain allowing a chance for people to be able to take some control (Dima *et al.* 2013).

Physiotherapy support was cited as being useful for enhancing motivation (Cooper, Smith & Hancock, 2009; Benjaminsson *et al*. 2007; Cook & Hassenkamp, 2000). Physiotherapists perceived themselves to have a role in building a relationship with people, engaging them in activity and providing support (Harman *et al*. 2014; Jeffrey & Foster, 2012). Working with people living with LBP to reduce their worries regarding engaging in activity and creating individualised plans were felt to be important aspects of the physiotherapist role (Harman *et al.* 2014).

The main role of the physiotherapist from the patient view was providing exercises (Crowe *et al*. 2010a; Cooper, Smith & Hancock, 2009; May, 2007). This view was echoed by physiotherapists with the focus of discussion around self-management being related to exercise (Harman *et al.* 2014; Jeffrey & Foster, 2012; Crowe *et al.* 2010a). Changing exercise behaviour was seen as a key role of the physiotherapist (Harman *et al.* 2014; Jeffrey and Foster, 2012). Exercise and the importance of this was a clear view from physiotherapists with their role being to educate people about exercise and to reduce the fear associated with this (Harman *et al.* 2014; Jeffrey and Foster, 2012). One study described in detail the importance of individualised exercise and making sure the patient views were understood and integrated through using a behavioural change approach (Harman *et al.* 2014). Physiotherapists also felt they had a wider role in providing education and facilitating understanding of pain, changing beliefs about this (Harman *et al.* 2014; Jeffrey & Foster, 2012) and empowering people (Jeffrey and Foster, 2012) rather than dictating what they should do (Harman *et al.* 2014). Jeffrey and Foster (2012) provided education focusing on the anatomical nature of pain.

There were some participants who choose not to seek support (Crowe *et al.* 2010a; Cooper, Smith and Hancock, 2009; May, 2007). Crowe *et al.* (2010a) found the majority of their participants did not suggest a healthcare professional as having a role in their self-management at that current time. In contrast to those seeking independence, there were people who did not want support as they felt they had not been involved in their care (Cooper, Smith & Hancock, 2009; Campbell & Cramb, 2008) or felt unsupported (Snelgrove & Liossi, 2009; Benjaminsson *et al.* 2007). A study focusing on physiotherapy highlighted participants who felt their goals had not been achieved did not see what else physiotherapy could do other than provide exercise (Cooper, Smith & Hancock, 2009). Alongside this, multiple failed treatments and a lack of understanding all contributed to this perceived poor experience of healthcare (Dima *et al.* 2013; Benjamission *et al.* 2007).

Physiotherapists reported that they could find people with chronic LBP difficult to encourage to manage their LBP (Jeffrey & Foster 2012; Crowe *et al.* 2010a). Challenges reported were the difficulty to change attitudes towards LBP (Jeffrey & Foster, 2012) and feelings of frustration among physiotherapists was noted (Jeffrey & Foster, 2012; Crowe *et al.* 2010a). This frustration was both at themselves through being unable to assist people to manage (Jeffrey & Foster, 2012; Crowe *et al*. 2010a) and at people who did not want to be actively involved in their management (Jeffrey and Foster, 2012). One study that included one physiotherapist expanded on how to address this through exploring if the person is ready to change their behaviour and working through barriers to this (Harman *et al.* 2014).

3.5 Discussion

The synthesis aimed to explore people living with LBP and physiotherapists experiences to understand what is involved with self-management and how this is interpreted in the context of LBP. This synthesis also aimed to explore the role of the physiotherapist in self-management with regards to support and education. Two overarching themes were generated; ‘self-management as controlling LBP: perceived ability and challenges’ and ‘support in the context of self-management’ have captured how self-management is understood within this context and challenges associated with this from both the person living with LBP and physiotherapist perspective. The role of support and education for self-management of LBP has been considered; however the limited literature regarding physiotherapist perspectives has been highlighted.

The current qualitative synthesis contains seven papers that had not been included in the four LBP qualitative synthesis discussed within the introduction of this chapter (Harman *et al.* 2014; Dima *et al.* 2013; MacKichan, Paterson & Britten, 2013; Briggs *et al.* 2012; Jeffrey & Foster, 2012; Zuffrey & Schulz, 2009; Campbell & Cramb, 2008). Bunzli *et al.* (2013) only share one study the same as this synthesis, both MacNeela *et al.* (2013) and Snegrove and Liossi (2013) shared four. MacNeela *et al.* (2013) themes regarding self-management and support, for which they provide limited detail regarding these concepts, made little reference to these shared four studies. Three of the four studies have been elaborated upon within this current synthesis due to their particular focus on self-management and physiotherapy (Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007; May, 2007). Whilst Froud *et al.* (2014) share five papers the same as this synthesis; they do not focus on self-management. This illuminates the differing focus of this review and generation of more recent literature included within this synthesis.

3.5.1 Appraisal considerations

There were no studies excluded on the basis of appraisal, however, it is necessary to highlight potential methodological issues that have arisen through the appraisal process. A table of a summary of the critical appraisal of each article is included in table 3.11.

Qualitative researchers should be reflexive and provide detailed description of their influence throughout the research process to enhance the trustworthiness of the findings generated (Patton, 2002). Reflexivity is often limited on the part of the researchers. This finding echo Bunzli *et al.* (2013) who found the same issue amongst a large proportion of the studies they included. Often studies provide no detail regarding the researcher, their background, and relationship with participants or potential influence on the study (Mackichan, Paterson & Britten, 2013; Briggs *et al.* 2012; Crowe *et al.* 2010; Snelgrove & Liossi, 2009; Zuffrey & Schulz, 2009; Campbell & Cramb, 2008; Liddle, Baxter & Gracey, 2007; Morris, 2004). Some of the studies give detail of the professions of the researchers (Harman *et al.* 2014; Dima *et al.* 2013; Jeffrey & Foster, 2012; Tvieto *et al.* 2010; Cooper, Smith & Hancock, 2009; Benjaminsson *et al.* 2007; May, 2007; Cook & Hassenkamp, 2000) with physiotherapist being the most frequently reported background of the researcher. However, further information such as potential influences is often not discussed. Dima *et al.* (2013) provided extensive background to their researchers and how this may have shaped the findings.

Involving researchers from various backgrounds aimed to enhance the credibility of the findings, gaining multiple perspectives (Dima *et al.* 2013). Harman *et al.* (2014) and Tvieto *et al.* (2010) also make a less detailed reference to the roles of the researchers during analysis. Jeffrey and Foster (2012) make clear their position as a researcher practitioner and give detail on their role as a physiotherapist and how this may contribute to the findings. Briggs *et al.* (2012) uses an independent person to carry out interviews, this may reduce researcher influence, however as Patton (2002, p.575) note “distance does not guarantee objectivity, it merely guarantees distance”.

Table 3.11: Critical appraisal of summaries within the qualitative synthesis

Article	Aim	Design Appropriate?	Recruitment	Data Collection	Relationship between researcher and participants	Ethical Approval	Data Analysis	Findings
Benjaminsson et al. (2007)	Clearly stated	Yes and justified	Purposive stratified sample. Appropriate to gain range of views as desired. Clear description of the process.	Appropriate method for the aims. Clear who carried out interviews and recorded and transcribed. Topic guide provided	Aware that a researcher who carried out interviews and analysed data was a physiotherapist. No further detail given regarding how this may shape the study.	Ethical approval was gained. Participants were given written information about the study. No further discussion of any ethical issues.	Clear who analysed the data. Triangulation of analysts. Use of quotations to support findings. Variations within the data given. No discussion of any disagreements among the research team and how resolved. Discussion of development of themes is brief.	Four categories of people with differing characteristics. No discussion of data that did not fit within these four categories.
Briggs et al. (2012)	Clearly stated	Yes	Discussed where participants were recruited from. No discussion of why specifically those participants from groups of people.	Appropriate for the aims of the research. Clearly described who carried out interviews and key areas explored.	Interviewer was independent of programme participants had previously taken part in. Development of questions is clear. No other discussion of researchers influence or predisposition in relation to the study.	Ethical approval gained. Participants were given written information about the study.	Clear who analysed the data. Triangulation of analysts. Data saturation discussed. Range of quotes used to illustrate points being made.	Clear presentation of findings. Links between themes illustrated.
Campbell and Cramb (2008)	Clearly stated	Yes	Snowball sample. Appropriate for aims of the study. Clear description.	The interview process is clear with topics covered, who carried out the interviews and modifications to questions each discussed.	A researcher carried out the interviews with participants however their background or relationship with participants is unclear.	Ethical approval was gained. No further discussion on informed consent or any ethical issues.	Clear who analysed the data. Clear description of the analysis process. Quotes given to illustrate findings.	Three themes developed which were clearly discussed. No discussion of any disagreements.
Cook and Hassenkamp (2000)	Clearly stated	Yes	Clear where participants were recruited from and	Appropriate data collection method.	Researcher makes their position clear, a physiotherapist and	Ethical approval was gained. No discussion of	Clearly described the process of analysis. Tables illustrating	Three major themes developed. Brief in areas., for example

			reasons for this.	Process is clearly described with a topic guide given. Informal observation of the rehabilitation group was discussed however no further discussion of how this data was used.	responsible for setting up the back rehabilitation group that is being evaluated.	participant information or informed consent.	development of themes.	relationship with professionals. Key informants used at the final stage of theme development.
Cooper, Smith and Hancock (2009)	Clearly stated	Yes	Very clearly described. Purposeful sampling with targeted subgroups and reasoning for this.	Appropriate method of data collection. Researcher who is a physiotherapist carried out interviews. Structured questions.	First researcher is a physiotherapist. No further detail on background or views. Discussion of support shapes the background.	Ethical approval was gained and participants provided informed consent. No further detail provided.	Clearly described process of analysis. Framework method used. Three researchers carried out the analysis.	Findings clearly presented with typology. Clear how themes were generated and made into a typology. Focus on telephone support and direct access prominent.
Crowe et al. (2010)	Clearly stated	Yes	Clear where participants recruited. No detail on why the most appropriate or the significance of the physiotherapy clinic chosen. Only average age of participants is provided.	Appropriate data collection method for the aims. Clear who carried out data collection – a research assistant and a topic guide is provided.	No detail of who researchers are or how they influenced the study.	Ethical approval was gained. No discussion of participant information or informed consent.	Very brief discussion of data analysis and limited discussion of the role of the analysts.	Strategies for self-management are given. Descriptive themes.
Dima et al. (2013)	Clearly stated	Yes	Clear where participants were recruited from and range of views that was aimed for	Appropriate method of data collection. The process is clearly discussed with a clear topic guide provided.	Detail is provided for all of the six researchers involved in the research. Their background and interests are explicitly stated alongside their involvement with the study.	Ethical approval and informed consent was gained	Clear description of the analysis process and the involvement of the research team and influence of this on the generation of themes. Appropriate use of quotes to illustrate the	Findings are clearly presented with links between themes and their development clear. Clearly linked back to the overall aim of the study.

							thematic analysis process	
Harman et al. (2014)	Clearly stated	Yes	Physiotherapist who ran class of interest. No further detail of why specifically that physiotherapist.	Appropriate methods of data collection. Triangulation of methods.	Research team professions are discussed. Different professional groups. Clear discussion of theoretical models that informed the development of themes.	Ethical approval and informed consent was gained.	Clear description of analysis process. Respondent validation used. No detail of the influence of different researchers or specific involvement of each.	Themes clearly related to the aim of the study.
Jeffrey and Foster (2012)	Clearly stated	Yes	Clearly described. Purposive sample requiring variation in physiotherapist characteristics.	Data collection clearly described. No detail of where interviews had taken place.	Position of the researcher involved in interviews and data analysis was made clear.	Ethical approval was and informed consent was gained.	In depth discussion of the data analysis process. Unsure relationship between four physiotherapists who checked themes. Limited quotations to support up points	Findings related to aims, clearly stated and linked to one another.
Liddle, Baxter and Gracey (2007)	Clearly stated	Yes	Process is clearly described. No justification of why the university was chosen. Recruited via advertisement, no specific people targeted.	Process of data collection is clearly described.	No detail of researchers influences, predispositions or background.	Approved by the university review board.	Detailed description of the analysis process. Triangulation of analysts and member checking was carried out. Extensive quotes to illustrate key themes developed.	Findings are clear and related to the aims of the study. Development of themes is clear.
MacKichan, Paterson and Britten (2013)	Clearly stated	Yes	The sampling process is clearly described.	The process of data collection is clearly described with a topic guide provided.	No detail regarding influence of the researchers or their background.	Ethical approval was gained with no further ethical issues discussed.	Limited detail on the analysis process. Clear who carried out analysis but little detail on the process or the development of final themes. Triangulation of analysts. Frequent quotes to illustrate main points.	Findings meet aims of the study and extensive discussion is involved.
May (2007)	Clearly stated	Yes	The sampling process was clearly described however unclear why the two physiotherapy departments were chosen. Detailed individual	Appropriate method of data collection. Clear who collected the data and topic guide used. Some leading	No detail regarding the researcher background or their influence.	Ethical approval was gained. No further discussion of informed consent or any ethical issues.	Clear description of analysis process. Examples of the development of themes	Findings are clearly presented. No data discussed that does not fit with themes. Self-management theme is small.

			participant information.	questions used.				
Morris (2004)	Clearly stated	Yes	Limited discussion of sampling. Unclear why the six participants were chosen over other participants.	Data collection process is clearly described. A topic guide is provided.	No detail regarding the researcher who carried out interviews and data collection. No detail regarding their influence, relationship to participants or background. Noted that they were a non participant observer to the back rehabilitation group.	Ethical approval was gained. No further discussion on ethical issues.	Analysis process clearly described. Clear who was involved in analysis and measures taken for trustworthiness such as peer review and member checking. Extensive use of quotes to illustrate themes.	Main findings presented as quotes and discussion illustrates the authors interpretation of these. Balanced argument.
Snelgrove and Liossi (2009)	Clearly stated	Yes	Clear where sample were recruited from however unclear why the final ten participants were chosen	Clear description of the process. Clear who carried out data collection, topics covered and location.	No discussion of the background or influence of the researchers on the study.	Ethical approval and informed	Detailed discussion analysis process and who was involved. Examples of how higher order themes were developed.	Findings clearly presented and related to the aim of the study.
Tvieto et al. (2010)	Clearly stated	Yes	Clear description of the sampling process and selection of participants.	Very clear description of the data collection process, questions used and who was involved.	Clear authors professions. No further discussion of influence or relationship to participants.	Approved by university review board.	Clear description of data analysis process. Clear who was involved and the stages of theme development.	Findings clearly presented. Clearly use the diversity of the sample to illustrate similarities and differences with people who work in different areas.
Zuffrey and Schulz (2009)	Clearly stated	Yes	Clear description of how participants were recruited.	Data collection method is appropriate and clear. No discussion of who carried out interviews.	No detail on researchers, their influence or background.	No discussion of ethical approval or issues.	Very limited discussion of data analysis. Unclear who analysed the data.	Findings clearly presented in a typology with a balanced argument.

The influence of the researcher on the direction of the research in some studies is clear, despite the researcher not making this explicit. Cooper, Smith and Hancock (2009) explore support for self-management of LBP. They provide a lot of discussion regarding telephone support and direct access, however there is minimal evidence for their themes looking at participants deemed as not self-managing and searching for a cure. Their views appear to be that support for self-management is important and view those as not wanting to self-manage as having had poor support from a physiotherapist. They do not discuss participants wanting independence as a potential outcome. In contrast, May (2007) view participants who want to be independent from support as self-managing. The researcher's views come through in their leading prompt, 'Self management: allow you to manage problem independently of medical assistance' (May, 2001, p11). This, and their discussion suggest they view self-management as something the person does independently. Thus these contrasting researcher views have framed the findings and discussion of these studies. Jeffrey and Foster (2012), May (2007) and Liddle Baxter and Gracey (2007) have a number of structured questions for their participants. While being appropriate to facilitating meeting the aims of their research this may limit the potential detail and explanatory value they could gain from participants and dictate the direction of the research too strongly (Patton, 2002).

The researchers aim to enhance the trustworthiness of their findings through using multiple analysts during the data analysis process (Harman *et al.* 2014; Dima *et al.* 2013; Mackichan, Paterson & Britten, 2013; Briggs *et al.* 2012; Crowe *et al.* 2010; Cooper, Smith & Hancock, 2009; Campbell & Cramb, 2008; Benjamisson *et al.* 2007; Liddle, Baxter & Gracey, 2007; Morris, 2004). Stating multiple analysts were used is insufficient to demonstrate rigour; development of the findings through discussion of discrepancies and contributions is required (Greenhalgh, 2014). Finding the same codes and themes is not the aim of multiple researchers analysing the data it is the refining of the analysis through discussion and different viewpoints (Barbour, 2001). In a large proportion of the studies, the contribution of multiple analysts is not discussed, thus their overall contribution is unclear. A small proportion of the studies provide some detail of the discussion among the analysts in shaping the findings (Dima *et al.* 2013; Tveito *et al.* 2010). Dima *et al*. (2013) have a range of healthcare professionals involved in data analysis and discuss their profession and background thus showing the different perspectives in which the research has been interpreted.

The aim of generating a diverse sample with regards to age, gender, and work for example and a variety of perspectives is often an aim among the included studies (Dima *et al.* 2013; Mackichan, Paterson & Britten, 2013; Jeffrey & Foster, 2012; Tvieto *et al.* 2010; Cooper, Smith & Hancock, 2009; Benjaminsson *et al.* 2007). However, the influence of this diverse sample is then not discussed in the findings and if different demographics influences the findings. Tvieto *et al.* (2010) is the only study to discuss in detail the effect of the various working environments on the findings. Time and experience is referred to as contributing to self-management (Mackichan, Paterson & Britten, 2013; Liddle, Baxter & Gracey, 2007; May, 2007) however there is limited discussion regarding this.

3.5.2 Discussion of Findings

The synthesis of qualitative primary studies has revealed how self-management of LBP is interpreted in the context of studies focusing on physiotherapists and people living with LBP perspectives. This has developed current understanding in this area as no previous synthesis has been found to focus exclusively on self-management. Having control over both pain and the impact of this was a prominent aspect associated with self-management among the studies included in this synthesis. Understanding the cause and nature of pain were highlighted from both physiotherapists and people living with LBP, with physiotherapists utilising education to achieve this. Individuals living with LBP who were not searching for a cure and engaging in strategies, frequently exercise were perceived as being involved with self-management of LBP. The role of support from physiotherapists' demonstrated variation; at times support was valued during an increase in symptoms, however others did not value support or were seeking independence from healthcare. Further an individualised approach from healthcare professionals was important.

Current systematic reviews focusing on self-management programmes show variation among defining self-management and what is involved with a self-management programme (Carnes *et al.* 2012; Oliviera *et al*. 2012; Du *et al*. 2011; Miles *et al*. 2011). The variation is reflected within the current synthesis as there are multiple strategies used by individuals. However, consistently studies within the synthesis echo the view of current policy and literature regarding self-management that the person with the condition, in this case LBP should take an active involvement or some responsibility for the management of their condition. However the role of support is highlighted within the current synthesis, with regards to people seeking support when having an increase in pain and healthcare professionals providing motivation and reassurance (MacKichan, Paterson & Britten, 2013; Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007). The value of support has been illuminated in Dwaswaard *et al.* (2015) qualitative synthesis exploring self-management support, however their focus was cancer, chronic kidney disease and rheumatoid arthritis. Thus, this synthesis provides a context for support in relation to LBP.

Control and understanding of LBP were discussed in the context of self-management within the current qualitative synthesis. Perceiving to have control is frequently cited as necessary for self-management; with this often underpinning self-management interventions (Newman, Steed & Mulligan, 2004; Lorig, Halsted & Holman, 2003). Self-efficacy has been shown to both predict and moderate outcome in musculoskeletal conditions (Miles *et al.* 2011). Control is associated with self-management and it appears to be an ideal scenario for people to feel in control of their LBP symptoms. Control is not exclusively related to pain and self-management of pain must consider the influence of this on wider aspects of a person's life including cognitive and emotional aspects alongside the influence on daily life (Stewart *et al.* 2014). Currently, control referenced within the above literature is not specifically explored in relation to LBP. Although Snelgrove and Liossi

(2013) qualitative synthesis refer to the influence of control on self-management, this receives little focus and is based on one study, Benjamission *et al.* (2007) included within the current synthesis. Thus, the current synthesis has developed understanding that control is often associated with self-management of LBP.

Within current literature regarding the subjective experience of LBP and the current synthesis there appears to be a disparity between what is involved in self-management of LBP and the day to day experience of living with LBP. Whilst control is advocated as necessary for self-management and illuminated within this current synthesis, extant qualitative studies portray the significant impact LBP can have on individuals lives (Froud *et al.* 2014; Bunzli *et al.* 2013; MacNeela *et al.* 2013; Snelgrove & Liossi, 2013). Thus questioning this control due to the influence on emotional, cognitive aspects and daily life highlighted within the literature.

The consideration of disparity among self-management and the subjective experience of LBP raised some concerns regarding the process of data extraction in this current qualitative synthesis. A concern was only extracting themes that explicitly discussed self-management if this were not the article's focus. There was the risk that this would take the findings out of context and see self-management as something separate. This would then not meet the aim to explore self-management in its entirety. However, on exploration of the articles self-management is discussed separately and often not integrated with the other findings. It emerged that self-management appears to be separate from discussions regarding how people are feeling day to day and managing wider aspects of their lives.

Studies that focused on strategies separately to the wider context were often physiotherapy focused (Jeffrey & Foster, 2012; Cooper, Smith & Hancock, 2009; Liddle, Baxter & Gracey, 2007; May, 2007). May (2007) discussed the negative impact of LBP affecting people's function and restricting activity. May (2007) considered exercise as a self-management strategy and people striving for independence however this is not linked to those finding difficulties with daily life and the impact of their LBP on this. Further, they refer to nothing seeming to work for people living with LBP, which appears incongruent with self-management. Similarly, Liddle, Baxter and Gracey (2007) discuss the effects of LBP on the individual such as frustration, limitation, fear and anger. In the context of self-management adherence to exercise is discussed, and the person being involved, again however it appears people are finding difficulties with day-to- day life, but seen as involved in self-management if partaking in exercise. However, it is acknowledged in their discussion the value of emotional support reducing fear so that people may partake in exercise. Physiotherapists within this qualitative synthesis perceived themselves to have an important role in education with regards to exercise and pain to reduce fear associated with this and (Jeffrey & Foster, 2012). However, physiotherapists focused on anatomical models with regards to the focus of education (Jeffrey & Foster, 2012). Further, focus of treatment is related to mechanical effects with Crowe *et al.* (2010a) physiotherapists focusing on exercise for core strength. A wider appreciation of the effects is needed.

An article referenced in both Bunzli *et al.* (2013) and Snelgrove and Liossi 2013) is Crowe *et al.* (2010b). Crowe *et al.* (2010b) explore the impact of LBP and a prominent finding is the unpredictability of LBP and how this negatively impacts control over LBP. There is no reference to what this may mean with respect to self-management. Interestingly, a study by Crowe *et al.* (2010a) included within the current qualitative synthesis, is the same population as the former study, however focuses on self-management strategies. As discussed, this study focuses on participants carrying out exercise or at times feeling frustrated with regards to their LBP. Thus self-management is not considered in relation to the day-to-day life of individuals within their study, but within the context of carrying out exercise. Thus, consideration of self-management in an integrated manner within physiotherapy is warranted.

There were some exceptions to the lack of integration found; studies that had a psychological focus provided more discussion and detail regarding the wider context and managing the psychosocial aspects of LBP (Tvieto *et al.* 2010; Snelgrove & Liossi, 2009). Tvieto *et al.* (2010) had a specific focus regarding workplace management. This study considers all aspects of the person's lives and managing the impact on them as a person and socially at work. Snelgrove and Liossi (2009) highlight the issues surrounding management that is focused around physical problems not fully addressing patient problems and considering the wider context. This study included participants with four or more years of living with LBP and from a pain clinic setting. Their themes not focused on self-management highlighted the emotional impact of LBP, sense of loss and biomedical dominance in the understanding of LBP.

These findings are developed in Snelgrove and Liossi (2013) qualitative synthesis through highlighting the importance of considering beliefs and social context, as a purely biomedical understanding will result in incomplete and potentially ineffective management. Although Snelgrove & Liossi (2013) refer to physically focused management strategies, this is based on two of their own studies, which focus on the same population of people living with LBP four or more years experience of living with this and were recruited from a pain clinic. Crowe *et al.* (2010b) is also referred to, however this study provides limited focus on this aspect. Thus, this qualitative synthesis has developed understanding of the strategies used in the management of LBP.

Reducing the impact of LBP on daily life underpins many definitions of self-management (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009; Barlow *et al.* 2002) yet the impact appears to be great on people's lives. When considering self-management of LBP in the context of physiotherapy in future studies, this should be framed within a biopsychosocial framework. This will allow consideration of the control of pain with regards to emotional, cognitive and daily life (Stewart *et al.* 2014). Currently, the findings echo Bunzli *et al.* (2013) and Snelgrove & Liossi (2013) with a physical focus to strategies dominating self-management practices.

McCracken & Eccleston (2003) refer to coping as either a behaviour in response to pain regardless of result or another view of this only concerning a successful outcome. Both Bunzli *et al.* (2013) and Snelgrove and Liossi (2013) qualitative synthesis categorise strategies into coping, the former definition of coping appears to apply these synthesis, reflecting avoidance and lack of successful outcome. However this contrasts with self-management, which does suggest successful outcome with regards to managing the impact of LBP. Self-management is often viewed more positively (Snelgrove & Liossi, 2013).

People who were searching for a cure and relying on the healthcare system to achieve this were viewed as not being involved with self-management. Acceptance appears to be important with classifying if people are involved with self-management of their LBP. Acceptance involves acknowledging reality and as a means to move forward in a meaningful direction; it is not giving up (McCracken *et al.* 2004). MacNeela *et al.* (2013) systematic review found people with LBP learned to live with the pain and self-management was discussed in terms of learning to ignore the pain and live with this, with restricting or avoiding activity discussed. This contrasts with studies in the current synthesis who perceive avoiding activity and resignation to this not self-management. A criticism of MacNeela *et al* (2013) is that their section regarding self-management practices does not provide a lot of detail, however it does relate to this synthesis of those not expecting a cure being classed as being involved with self-management. Bunzli *et al.* (2013) demonstrated a key finding within their synthesis with regards to people living with LBP wanting a diagnosis and cure for LBP. This corroborates with the current qualitative synthesis, with studies that were not included within that review (Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Benjamission *et al.* 2007; Liddle, Baxter & Gracey, 2007). However a diagnosis was also felt necessary for self-management thus having an understanding of the condition is important (MacKichan, Paterson & Britten, 2013; Benjamission *et al.* 2007).

There were four studies included physiotherapist perspectives on self-management of LBP (Harman *et al.* 2014; Jeffrey and Foster, 2012; Crowe *et al.* 2010a; Morris, 2004). Physiotherapist responses were minimally used in Morris (2004) and were not able to contribute to this review. Crowe *et al.* (2010a) provide limited detail regarding physiotherapist perceptions of self-management. They explain that physiotherapists main role in self-management is to provide exercise and that they can feel frustrated that they sometimes cannot help people with LBP. Their discussion does not provide any further detail or recommendations regarding physiotherapist perceptions. Frustration of physiotherapists is echoed by Jeffrey and Foster (2012) and expanded upon by highlighting difficulties when patients have different beliefs to physiotherapists regarding active involvement in management. This finding has similarities to a critical review carried out exploring the concept of self-management (Kendall *et al.* 2011). The review focused on exploring what self-management meant in relation to chronic illness and one definition discussed that people can be seen as not self-managing if they are not doing what that specific healthcare professional views self-management to be.

An underpinning concept of self-management programmes is to focus on what the patient would like to do, not what the healthcare professional thinks they should (Lawn & Schoo, 2010). Jeffrey and Foster (2012) physiotherapists view those people who are not willing to do their exercises as not being involved in management. A similar view was also found among a study by Daykin & Richardson (2004) whom interviewed physiotherapists (n=6) regarding their pain beliefs about the management of people with LBP. Physiotherapists described difficulties when facilitating patients to manage their LBP who were not actively involved. Again, this was due to the people with LBP not having the same beliefs as the physiotherapist. Thus, this must be considered in relation to self-management.

Harman *et al.* (2014) gain one physiotherapist’s perception regarding a behaviour change programme aiming to enhance self-efficacy and self-management. The patient group the physiotherapist is referring to is very specific with this being a military population. This study provides a detailed insight into the process involved in enhancing self-management skills from a physiotherapist perspective. The physiotherapist who is the focus of Harman *et al.* (2014) was the only study to provide solutions to difficulties faced and discuss employing behaviour change techniques and individualised exercise to deal with this. These findings contrast with the other studies. This may be due to the physiotherapist having a specific interest in behavior change and self-management theory and having designed the programme they were discussing. Harman *et al.* (2014) provides valuable insight, however contrasts with other physiotherapists in the studies included in this synthesis and is a specific military context. A study that interviewed twelve UK physiotherapists uncovered the difficulties physiotherapists can face with regards to changing the beliefs and fears people have towards LBP and behaviour change to address this (Sanders *et al.* 2013). Thus Harman *et al.* (2014) findings are not common views of physiotherapists. Further exploration of frontline physiotherapists is required.

Exercise is the main area discussed by physiotherapists in the context of self-management of LBP. Although the physiotherapists within Jeffrey and Foster (2012) study discussed empowering people to self-manage, the quotations used to support appeared to be telling the patient what to do rather than being empowering. An example is the physiotherapist stating they empower people by discussing what the best exercise programme is for them. However, this appears to be giving the person little choice and dictating what needs to be done from a therapist agenda. It is clear that the role of exercise is valued and encouraged by physiotherapists for the management of LBP. A key role of the physiotherapist is to encourage exercise with each study discussing the importance of this for the management of LBP. The content of self-management interventions highlighting the dominance of exercise (Richardson *et al.* 2014) may have influenced physiotherapy perception of self-management as this being the major focus. Whilst the importance of exercise is appreciated and echoed within the current synthesis, there is more to self-management considering the definitions discussed in chapter 1.

There was limited discussion among the studies that had physiotherapists as their sample of how physiotherapists encourage exercise. The studies included in the synthesis contrast with Thompson (2008) who carried out an ethnographic study focusing on physiotherapist beliefs who work within a pain management clinic. Their feedback considered the whole person and accounted for the various aspects of lives someone with chronic pain has to manage. This may reflect that differing contexts may influence people's views.

Alongside physiotherapist views, the implicit views of the authors of studies regarding people with experience of LBP are apparent. As previously discussed, Kendall *et al.* (2011) found self-management to be defined by what the healthcare professional felt was classified as self-management. Further to this, the review proposed people might be viewed as being noncompliant with what is viewed by healthcare professionals as self-management and be seen as needing more education to change to what the professionals view is best. With many of the included articles people are classified as 'self-managing' or not. This may often be the author viewpoint of what constitutes as somebody who is 'self-managing'.

Overall, the included studies demonstrate a need for exploration of physiotherapist views and experiences of self-management of LBP. Jeffrey and Foster (2012), although they recruited physiotherapists from UK health service and private practice do not have self-management as an overall focus, thus detail regarding this is limited. There is scope to further explore the tensions or difficulties physiotherapists perceive to be apparent regarding self-management of LBP. There appears to be a problem of physiotherapists feeling unable to support management, however limited detail is uncovered as to why this is the case. Further exploration is needed regarding how physiotherapists support self-management of LBP and reasoning why. Although there is some insight within the included studies, further detail is needed in a health service context with a range of physiotherapists as the majority of detail has been derived from a very specific context based study on the views of one physiotherapist (Harman *et* *al.* 2014). Although the role of the physiotherapist was seen to provide support to people with LBP, this is not expanded upon in Jeffrey and Foster (2012).

This qualitative synthesis has highlighted a number of areas for further research with regards to people living with LBP. Currently people are viewed as being engaged in self-management yet at times are having difficulties within daily life, as previously discussed, there is a wealth of literature highlighting the difficulties people are facing living with LBP (Bunzli *et al.* 2013, MacNeela *et al.* 2013; Snelgrove & Liossi, 2013). These two concepts do not fit alongside one another as per the biopsychosocial underpinnings of self-management. Further, control is frequently reported as part of self-management, yet control does not appear to associate with literature regarding day to day difficulties people living with LBP can face. Snelgrove and Liossi (2013) advocate moving away from a biomedical focus and considering people's psychosocial context for more holistic self-management. The current literature is dominated by exploration of self-management strategies, often discussed in a separate context from peoples' daily lives. The focus of people self-managing their pain through exercising is a frequent finding, however this must be considered in the wider context of people's daily lives.

Although strategies or tasks that the person living with LBP may use as part of self-management is necessary to explore, it would be helpful to explore this in relation to the impact on their daily life. Alongside this, difficulties with self-management is considered within some studies, however there is scope to further explore the challenges people face with regards to self-management.

There is scope to consider self-management in the wider context and if people are managing the impact of LBP on their lives. As there is currently incongruence with some studies stating self-management is occurring, however frequently referring to exercise and a wealth of literature depicting the challenges people living with LBP face and impact on their daily life. Self-management does not appear to be being considered in relation to managing the biopsychosocial impact of a condition, but being involved in tasks.

This qualitative synthesis has informed subsequent phases of the research. Physiotherapist views and experiences regarding self-management of LBP are currently limited within the literature, and warrant exploration due to their role in self-management. Further, their difficulties and frustrations of supporting people with LBP are apparent but provide limited detail. The disparity proposed with the portrayal of self-management and the experience of people living with LBP warrants further exploration. There is currently a lot of focus on exercise, and whilst this is an important aspect, self-management encompasses the person's holistic context and must be considered as self-management involves managing the biopsychosocial impact of a condition on daily life (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009). Studies within this current qualitative synthesis refer to people self-managing their LBP; however how this relates to the biopsychosocial impact is not often apparent. The subsequent phases will explore, physiotherapists views and experiences of self-management of LBP (chapter 4) and if people living with LBP are self-managing the impact of LBP and how this is achieved (chapter 5).

Chapter 4

4. What are Physiotherapists Views and Experiences of Self-Management of Low Back Pain in Clinical Practice?

4.1 Background

LBP is often managed in primary care, with physiotherapists frequently being the professionals people living with LBP will access (Foster, Hill & Hay, 2011). Physiotherapists have a prominent role in encouraging people to manage their LBP (Moffet & Mclean, 2006). The position of physiotherapists means they have the potential to influence people's health behaviour and management of LBP (Moffett, 2002).

The current understanding of the role of the physiotherapist in self-management emerged through exploration of studies focusing on people living with LBP in the qualitative synthesis (chapter 3). Cooper, Smith and Hancock (2009) encouraged physiotherapists to provide more support for self-management of LBP. This study criticised the limited range of strategies people living with LBP employed and advocated the physiotherapist to consider a wider range of options with Crowe *et al.* (2010a) concurring this point regarding the limited range of strategies employed.

A systematic review by Oliveira *et al.* (2012) exploring the effectiveness of self-management interventions for LBP concluded a statistically small effect on pain and disability compared with minimal intervention. This review advocates further exploration of self-management of LBP, acknowledging the uncertainties surrounding the definition and content of self-management programmes. Qualitative research is encouraged as a means to explore what is felt to be involved in self-management programmes and if these are effective. Oliveira *et al.* (2012) pose an interesting argument challenging the effectiveness of self-management. A qualitative exploration of this, with physiotherapists who are expected to encourage self-management of LBP will be valuable in contributing to this field's understanding of the perceived effectiveness and use. Alongside this Richardson *et al.* (2014) advocate further exploration of the input and influence of the physiotherapist in self-management. The proposed study will not be in the context of enquiring about specific programmes for self-management, but will aim to gain a broader perspective and an understanding of what self-management is viewed to be in physiotherapy practice and how this is implemented.

The inconsistent views in the literature may transfer to unclear views in practice as the various ways self-management can be interpreted may potentially pose a challenge for healthcare professionals (Cameron & Stewart, 2011), such as physiotherapists. The differing definitions and understanding, alongside the limited exploration of self-management of LBP from the physiotherapist perspective discovered in chapter 3 qualitative synthesis presents an area of the literature open for exploration.

The qualitative synthesis preceding this chapter demonstrated paucity in the literature regarding physiotherapist views and experiences of self-management of LBP. There is a clear gap in the literature regarding physiotherapist views and experiences of self-management of LBP. Crowe *et al.* (2010a) and Morris (2004) minimally used the responses from physiotherapists regarding self-management. There is some discussion regarding exercise being the predominant strategy used by physiotherapists in relation to the management of LBP in the studies (Jeffrey & Foster, 2012; Crowe *et al.* 2010a). Crowe *et al.* (2010a) briefly refer to physiotherapists recommending exercise and at times feeling unable to facilitate management of LBP, however exploratory value regarding this was very limited. One study included one physiotherapist by Harman *et al.* (2014) who provided in depth detail of encouraging exercise and behaviour change. However, this focus was a military population, a specific behavioural programme and findings did not concur with other physiotherapist views. It is therefore difficult to use this evidence to inform practice to begin to understand self-management of LBP in this context.

Jeffrey and Foster (2012) did not discuss self-management in detail, nor was this the primary focus of their research. Difficulties were highlighted by Jeffrey & Foster (2012) physiotherapists who felt supporting people with perceived passive attitudes could be difficult at times. A study generated similar findings; a grounded theory study by Daykin & Richardson (2004) explored six physiotherapists' pain beliefs during a LBP consultation. This study found a dominance in biomedical views among physiotherapists and challenges with supporting people they viewed as 'difficult', those viewed as being passive and searching for a cure. This study was carried out ten years ago, thus it is necessary to explore the views of physiotherapists in the current time. There have been a lot of developments with regards to managing LBP in recent times (Sanders *et al.* 2013; Foster, 2011).

There is a need to explore self-management of LBP in detail from physiotherapists' perspectives due to their front line position. A study is required to explore how self-management is viewed in practice and how physiotherapists understand and facilitate this. This is an important area of clinical practice to explore as these professionals are expected to encourage self-management of people living with LBP. Further, physiotherapists themselves may require support for self-management, thus their training needs will also be explored.

4.2 Aims

- To explore physiotherapists understanding and experiences of self-management of LBP
- To explore the role of the physiotherapist in self-management of LBP
- To explore physiotherapists training needs regarding self-management in their clinical practice

4.3 Methods

4.3.1 Design and sampling

A qualitative design was used for the study. Physiotherapists were recruited from two physiotherapy outpatient departments in two different towns within one NHS Trust. A total of fifteen physiotherapists were invited to take part in the study, of which ten replies were received. The participant information sheet sent to physiotherapists is detailed in Appendix 3. The reasoning for the five participants being unable to attend were due to work commitments or holiday. The sample was purposeful as it aimed to achieve a range of views, thus the outpatient clinics were appropriate to target due to the diversity in clinical experience and seeing clientele from different geographical locations. To be included in the study the physiotherapists had to be working in musculoskeletal outpatients and had to have worked with people living with LBP in the last six months. The characteristics of the physiotherapists involved are detailed in table 4.1**.**

Table 4.1: Characteristics of physiotherapists

Physiotherapist	**Length of experience (years)**	**Work context**
PT 1	1-5	With other physiotherapists
PT 2	>20	With other physiotherapists
PT 3	5-10	With other physiotherapists
PT 4	5-10	With other physiotherapists and lone working
PT 5	11-20	With other physiotherapists
PT 6	1-5	With other physiotherapists
PT 7	>20	With other physiotherapists and lone working
PT 8	11-20	With other physiotherapists and lone working
PT 9	11-20	With other physiotherapists and lone working
PT 10	1-5	With other physiotherapists and lone working

The exact details of length of experience have not been given due to the groups working together and the possibility of other staff being able to identify participants based on the year qualified. For the same reason, the sex of participants has been omitted from being assigned to an individual. There were eight females and two males.

4.3.2 Data collection

Two focus groups were carried out with five physiotherapists in each group. A minimum of four and maximum of ten participants is recommended for a focus group (Bryman, 2012; Patton, 2002). The physiotherapists recruited all worked within the musculoskeletal field of physiotherapy and encountered people with LBP frequently. Within the physiotherapy departments the physiotherapists work closely with one another and provide peer support, therefore this style of interview is appropriate as they are natural groups. The participants provided written informed consent before the focus group commenced. The consent form used for this study is detailed in Appendix 4.

An interview guide (figure 4.1) was prepared with a series of areas the focus groups aimed to cover, however it was flexible enough to not prevent the flow of natural conversation and allow topics to be discussed as they emerged. The topic guide was informed by the qualitative synthesis (chapter 3) that highlighted the limited literature regarding the understanding from the physiotherapist perspective of self-management. The researcher (JM) moderated both focus groups, which were digitally recorded and transcribed verbatim. The participants were aware that the researcher (JM) was a physiotherapist, which allowed natural conversation to occur. The first focus group lasted one hour and twelve minutes and focus group two lasted one hour and ten minutes.

4.3.3. Data Analysis

The ‘Framework Method of Analysis’ was used to facilitate data analysis (Spencer *et al.* 2014; Ritchie, Spencer & O’Connor, 2003). As discussed in chapter 2, the Framework Method has advantages of being suitable to answer specific questions; it is very systematic and comprehensive (Srivastava and Thomson, 2009). Thus enhancing credibility of the analysis process. The Framework method allows for pre determined themes to be used, but is flexible enough to allow for new themes to be generated (Robson, 2011). For this phase of the study, it is appropriate as it can answer specific questions regarding physiotherapists' experiences of self-management as well as allowing topics not considered by the researcher to emerge (Ritchie and Spencer, 2002).

Figure 4.1: Interview guide

Opening questions

Initial questions were kept purposefully broad to explore if self-management was mentioned without specific prompting

- How do you approach the management of recurrent/chronic low back pain?
- Tell me about yours (physiotherapist) and the patients role in the management of recurrent/chronic low back pain
- What are your thoughts about what people with recurrent/chronic low back pain want from physiotherapy?

Understanding

- Understanding of self-management

Use in clinical practice

- The place of self-management for people living with LBP

Experience

- Experiences facilitating self-management

Training

- Would further training make a difference to self-management of low back pain?

Probe: How? What would this involve?

Following the first focus group, JM began familiarisation with the data to allow recognition of recurrent themes, and to understand the data as a whole, which is crucial for subsequent development of themes (Ritchie, Spencer & O'Connor, 2003). The full transcript was listened to in full twice and read four times initially, noting recurrent themes. Using the interview guide, aims of the study and issues that emerged from the respondents JM began the development of the thematic framework. The transcripts were returned to many times to allow refinement and context of the thematic framework. One of the benefits of this approach is its flexible approach between stages (Ritchie & Spencer, 2002). The framework was then applied to the data, again with refinement of the framework occurring during this process. At this stage focus group two was carried out. The same process as focus group one was applied to focus group 2, with new themes emerging. Following this data were sorted by theme and summarised in matrix based charts but retaining the language of participants (Ritchie, Spencer & O'Connor, 2003).

4.3.3.1 Familiarisation

Familiarisation identified potential areas of inquiry and emerging themes within the data. Figure 4.2 details the initial thoughts following a period of familiarisation. Self-management being the individual living with LBP responsibility was a key finding at this stage.

- Psychosocial issues were seen as a challenge. Physiotherapists were unsure of how to deal with people who present in their view with psychosocial issues. Physiotherapists feel lacking in CBT/psychological training.
- Self-management is the person being independent and taking responsibility. Methods to do this were discussed, these included exercise, posture, keeping moving and active.
- The physiotherapist has a role in advice, strategies, support and offering open access
- Physiotherapists had strong beliefs of what the person with LBP should be doing and were frustrated if this were not happening.
- Lack of resources and team to successfully manage

Figure 4.2: Familiarisation: areas of inquiry for theme development

4.3.3.2 Thematic framework

Through familiarisation six initial themes initially emerged from the data. One theme, theme four, termed ‘medical focus’ was merged with existing themes following the charting phase as the themes were felt to link well with the current themes rather than be stand alone. This left five initial themes with sub themes, which are detailed in figure 4.3. A key aspect of Framework Analysis is the use of priori knowledge or themes as part of the thematic framework (Ritchie & Spencer, 2002). The aims of the research informed key areas to focus on; these included the ‘physiotherapist role’, ‘understanding self-management’ and ‘training’. The difficulties physiotherapists faced and influence of their beliefs emerged from the familiarisation process. Sub themes emerged from the data; the priori themes provided a means to focus the exploration of the transcripts however the Framework Approach is designed to be flexible to allow new, unanticipated themes to emerge (Ritchie & Spencer, 2002). All data was indexed with the corresponding index number following construction of the thematic framework.

4.3.3.3 Charting

Charting involved making matrix based charts of each theme and their sub themes along the top and each participant down the side and including summarised data under each of these headings to allow the researcher to get a ‘feel’ for the data in that theme and across participants (Richie & Spencer, 2002). Data summary captures what the participants are saying whilst making the data more manageable (Spencer *et al.* 2014). Physiotherapists frequent discussion of psychosocial influences on pain was further highlighted at this stage due to being able to see the data as a whole in the charts.

Physiotherapist role
1.1 Strategies
  1.11 Exercise
  1.12 Posture
  1.13 Pacing
  1.14 Breaking down day
  1.15 Goal setting
  1.16 Acknowledging pain
  1.17 Functional activities
1.2 Support
1.21 Open access
1.22 Facilitator
1.23 Relapse
1.24 Reiterating

1.3 “Treating”
1.4 Building rapport
1.5 Needs to be part of MDT
4.1 Can’t fix
4.2 Paternalistic/prescriptive
4.5 Holistic/person centred

Understanding self-management
2.1 Decrease pressure
2.2 Ultimate aim
2.3 Maintain
2.4 Last resort
2.5 Partnership
2.6 Patient responsibility
2.7 Support/open access
2.8 Understanding of condition
2.9 Control/acceptance
2.10 Approach depends on the individual
2.11 Exercising
2.12 Engaging in strategies

Difficulties faced
3.1 Feeling inadequate
3.2 Challenging patients
3.3 Inappropriate referral
3.4 Lose contact
3.5 Time
3.6 Passive patients
3.7 Cycle
3.8 Drained
3.9 Middle patient
4.4 Pain exaggeration/credibility of low back pain

Physiotherapist beliefs
5.1 Previous treatment
5.2 “People ‘doing something’
5.3 Patient expectations
5.4 Personal beliefs
4.6 Treatment effect
4.7 Need for CBT
4.3 Objective feedback confirmation

Training
6.1 CBT
6.2 Delivery of self-management

Figure 4.3: Thematic framework with index

4.3.3.4 *Developing Categories and Themes*

Following charting, interpretation began through the process of finding elements and dimensions within the data and developing categories and higher order themes (Spencer *et al.* 2014b). This process is viewed as keeping the development of final themes or classes as close to the data as possible and to ensure important aspects are not missed (Spencer *et al.* 2014b). This process moved from the initial descriptive thematic framework to developing more analytical themes (Ritchie, Spencer & O'Connor, 2003).

4.4 Findings

The findings from data analysis revealed three linked higher order themes. These were 'Self-management: the ultimate aim yet last resort', 'Physiotherapist concerns about suitability and ability' and 'the patient-physiotherapist partnership: contributing factors'. Each of these higher order themes are discussed below.

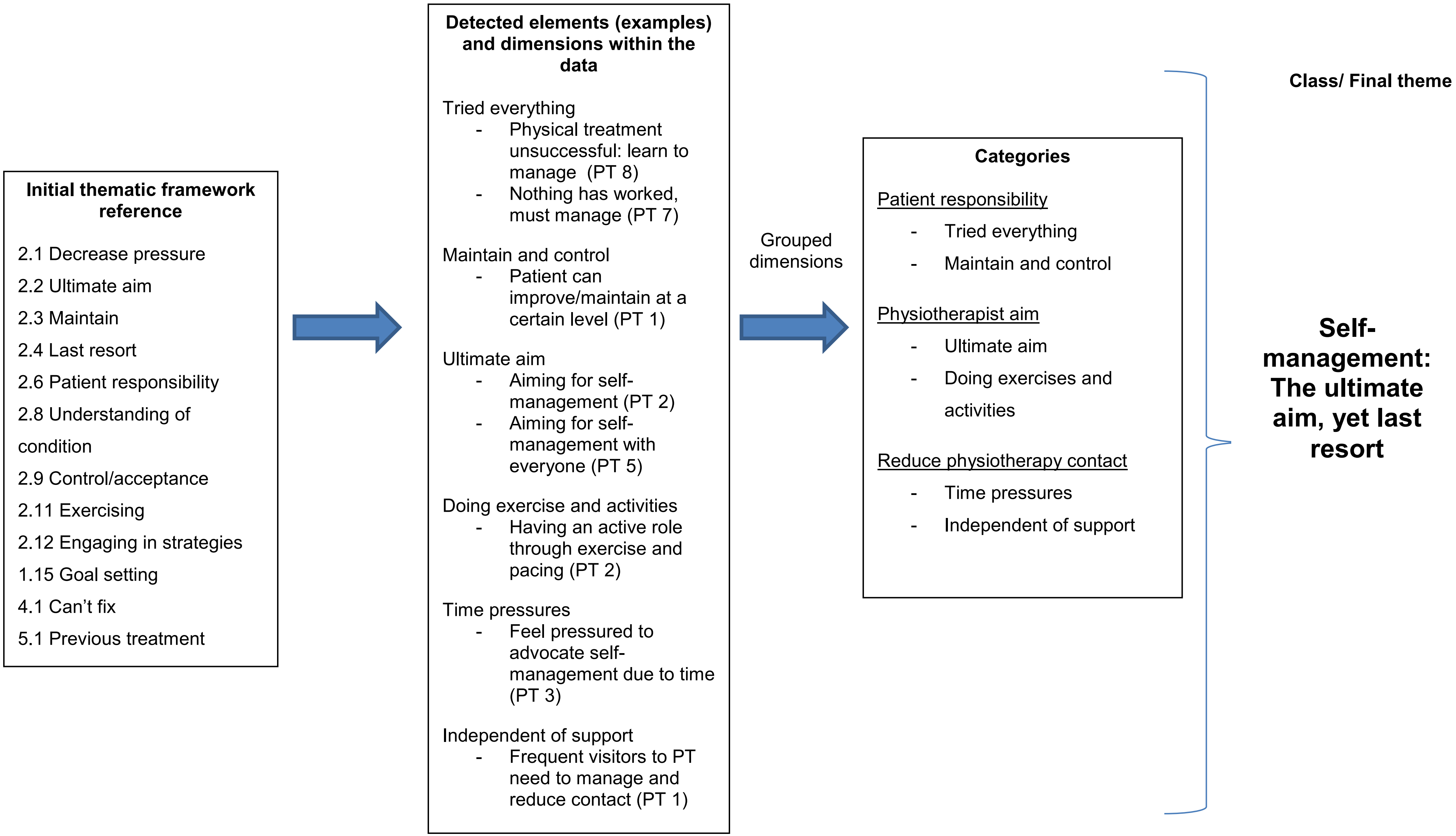
4.4.1 Self-Management: The Overall Aim Yet a Last Resort

Self-management was often viewed as the ultimate aim or goal of physiotherapists working with people living with LBP. Frequently this referred to the person living with LBP developing an understanding their condition and being able to manage flare-ups and control their pain. However in contrast there appeared to be a different side to the physiotherapist view of self-management as a last resort. Self-management was viewed in different ways within the focus groups. When directly asked about self-management physiotherapists viewed this as their ultimate aim, the person being able to live day to day with their condition doing whatever strategies worked for them. Generally this had a positive tone and was about supporting the person living with LBP. However, on exploration of the discussion when not directly asking about self-management, self-management can be seen as a last resort or something that is referred to do when it feels all other options have been exhausted or there are time pressures. Self-management was then no longer viewed as the development of expertise and understanding, but something that people had no choice in but to do. This view appeared when discussing people physiotherapists found difficult to encourage to be involved with the management of their condition.

Figure 4.4 illustrates the development of this theme. The diagram depicts the development of the initial themes from the thematic framework through to higher order themes. The elements capture the essence of physiotherapist responses, and these were then grouped into dimensions. Dimensions with commonalities between them become grouped into categories and finally categories into higher order themes.

The overall goal stated by physiotherapists when working with people with LBP was unanimously self-management. If this was discussed or questioned, physiotherapists responded with self-management of LBP being their overall aim. There appeared to be an implicit view that people would understand what self-management was and this was often not expanded upon to give an overview of what this entailed. Self-management was undoubtedly something physiotherapists considered part of their plan for people living with LBP and something important for them to work towards.

> *PT 4: The role of self-management whether it's one session or six sessions is what I'm aiming for, I don't know about anyone else*
> *PT 2: Yeah, with chronic low back pain, yeah*
>
> *PT 5: I think all our patients ultimately we aim to get to self-manage , in, you know, along with like manual therapy and other things but everybody we want to prevent recurrence or worsening of their symptoms to a certain extent*
>
> *PT 8: Every patient you see you're aiming for self-management because you give them homework to do often or they've decided their homework*



Initial thematic framework reference

- 2.1 Decrease pressure
- 2.2 Ultimate aim
- 2.3 Maintain
- 2.4 Last resort
- 2.6 Patient responsibility
- 2.8 Understanding of condition
- 2.9 Control/acceptance
- 2.11 Exercising
- 2.12 Engaging in strategies
- 1.15 Goal setting
- 4.1 Can't fix
- 5.1 Previous treatment

Detected elements (examples) and dimensions within the data

Tried everything
- Physical treatment unsuccessful: learn to manage (PT 8)
- Nothing has worked, must manage (PT 7)

Maintain and control
- Patient can improve/maintain at a certain level (PT 1)

Ultimate aim
- Aiming for self-management (PT 2)
- Aiming for self-management with everyone (PT 5)

Doing exercise and activities
- Having an active role through exercise and pacing (PT 2)

Time pressures
- Feel pressured to advocate self-management due to time (PT 3)

Independent of support
- Frequent visitors to PT need to manage and reduce contact (PT 1)

Grouped dimensions

Categories

Patient responsibility
- Tried everything
- Maintain and control

Physiotherapist aim
- Ultimate aim
- Doing exercises and activities

Reduce physiotherapy contact
- Time pressures
- Independent of support

Class/ Final theme

Self-management: The ultimate aim, yet last resort

Figure 4.4: Development of 'Self-management: The ultimate aim yet last resort' theme

With regards to self-management being the overall aim or goal of physiotherapists, the discussion of what this specifically entailed was quite vague. Self-management was felt to require someone to understand their condition and to feel in control of this to ultimately be able to manage a recurrence of pain if it were to occur. Involvement in exercises frequently led the conversation regarding self-management, with some discussion of carrying out functional activities. The focus of being involved with a task or activity was clear. Being involved in self-management practices may be quantified by physiotherapists if participants were partaking in exercises provided. However it was also recognised that exercises may not be appropriate for every individual and that exercises may pose challenges for people to incorporate into day-to-day life.

> *PT 2: Recommend exercise groups*
>
> *PT 4: So, the role for me, the role of self-management, that's what I'm aiming to get the patient doing*
>
> *PT 5: The only really way you're going to learn if someone is self-managing is follow them up six months down the line and they're doing their exercises you asked them to*
>
> *PT 7: Its very much, erm giving them a programme of exercises using tools so they can then go away and refer to, so they can use at home and all the self treatment they can do at home, ice packs or whatever, heat. Its teaching them stretches, its teaching them the regime*
>
> *PT 9: Exercises themselves, particularly in these chronic patients may not necessarily be the answer*
>
> *PT 5: It is hard; I think if you're not into exercise it must be really difficult*
> *PT 2: I think it's hard to fit into your life as well*
> *PT 5: I agree*
> *PT 1: It's hard to fit into your life if you're not interested in it absolutely*
> *PT 2: It's hard when you're working and if you've got a family*

There were other suggestions with regards to the person living with LBP being involved with such as postural awareness, medication, pacing and goal setting were each discussed as strategies that people could use to manage their LBP. Although goal setting was viewed as valuable by physiotherapists it wasn’t something that was frequently discussed and time presented a barrier to implementing this with people.

> *PT 2: I sometimes feel that specific explanations of pacing and things and try and get people to do that themselves, rather than say right do this many exercises, now add two more, try and get them to recognise when they’re managing something okay and can increase it or when they’re sort of doing too much and try to teach them how to monitor those things*
>
> *PT 5: I think with the setting goals… to get the goals set, I sort of, you know, with having less time to assess people, say this week definitely going to do this, this and this and I find I don’t have the sort of time to set these goals really*
>
> *PT 8: I’ve got a few chronic patients I’ve tried to use goal setting with where they want to be and then mapping out their day and this is when I found there was nowhere for her to go I just had to do the best I could*

Self-management being the patient responsibility dominated the conversation regarding self-management, with the majority of physiotherapists referring to this being the responsibility of the individual living with LBP. Physiotherapists expect people to take ownership of their problem and understand what they need to do to live with their problem day to day. The majority of physiotherapists interviewed echoed this view. Physiotherapists viewed self-management as the person having an understanding of their condition and knowing what to do about this. It is a clear expectation of physiotherapists that people with LBP should take responsibility and be independent.

> *PT 1: (Q: what does self-management mean?) The patient has an idea of what they need to do in order to improve or maintain things at a certain level*
>
> *PT 3: (self-management) an understanding of their own condition I would say*
>
> *PT 4: (Q: What is self-management?) That the patient is looking after his or her own condition*
>
> *PT 6: Understanding, controlling pain symptoms*

> *PT 7: Rather than having the expectation that they're going to be treated and going to be passive it has to be in partnership with them, they have ownership of that problem*

> *PT 10: What is self-management, somebody on their final appointment walks out the door and hopefully doesn't need to come back again for that problem*

Physiotherapists frequently discussed maintaining a level as part of self-management. This appeared to be in relation to pain and function. Requiring acceptance is evident as physiotherapists refer to there being no cure or the problem not going to go away therefore part of patient responsibility is to accept the nature of their problem and not have the expectation of pain going to be cured quickly. The discussion regarding maintaining a level suggests maintaining a level that the patient can function day to day, however this is more implicit within the discussion as explanation of this 'level' that many of the physiotherapists referred to is not expanded upon.

> *PT 1: (self-management) the patient has an idea of what they need to do in order to improve or maintain things at a certain level*

> *PT 5: I think all our patients ultimately we aim to self-manage…we want to prevent recurrence or worsening of their symptoms*

> *PT 7: Ownership of their problem so they can self-manage and be independently self-managing and accept that they are as functionally able as they can be*

> *PT 10: Self-management... someone who manages to keep themselves at a level they've managed to find through whatever means, taking up an activity or doing some gentle exercise or pacing their life differently*

There is a contrast in views in some instances regarding self-management. Some physiotherapists refer to this as improving or maximising the situation, thus changing people's perspectives on pain and improving daily life. In contrast, other physiotherapists have the view of living with pain that is not going to go away, thus self-management is the only option. Self-management on these occasions appears to denote the people living with

LBP having no choice and this is something that must be done. Self-management used in this sense appears to be full responsibility is with the person living with LBP and that nothing is going to change. Rather than maximising potential, it appears to be understood as people resigning themselves to living with pain.

> *PT 8: Everyone you aim to self-manage, maximise*
>
> *PT 7: It's going back to the self-management thing again when you can never really get them out of the situation where they've got pain all the time*
>
> *PT4: But if you're talking about chronic back pain I think the big issue is that if they're not managing it themselves we cant get it better, unless they're doing it then-*
> *PT 5: We're wasting our treatment aren't we*

Alongside referring to self-management as a way to try to improve or maintain a person's situation self-management could be viewed as a last resort when treatments had been unsuccessful or to reduce physiotherapy contact. The aim to reduce contact was in some cases a main point raised regarding why physiotherapists sometimes advocate self-management. Patient responsibility was taken in a very literal sense, with little discussion of precursors to self-management discussed previously such as understanding and ability to control the impact of LBP. If people had received treatment from a physiotherapist and this had been unsuccessful then self-management was referred to in an almost negative sense.

> *PT 4: Whatever else I do, is you're going to end up, you've still got back pain, if you don't know how to manage it yourself then-*
>
> *PT 5: The patient has to take responsibility. I think that's the problem, a lot of them don't want to, maybe they're not in the mind-set to do it*
>
> *PT 6: If you think its taking a lot of your case load you know that you're not going to do much hands on so it's a way of managing it and you've probably tried all of that*
>
> *PT 7: It's going back to the self-management thing again when you can never really get them out of that situation where they've got pain all the time*

> *PT 8: They realise actually, I've gone down all these physical treatments and they haven't worked, I have to learn now how to manage it because it's not necessarily going to go, I have to manage this pain*

A contrasting view by one physiotherapist explored the possibility that physiotherapists must consider what they are aiming for and what their patients are aiming for. Physiotherapists may view this as their ultimate aim however it must be considered the aim of the person living with LBP. Giving responsibility solely onto the person living with LBP if they are struggling with this, perhaps the physiotherapist must consider their role in this.

> *PT 9: Quite often you talk about the process to achieve self-management and there's an ideal process, and a process what we have and maybe we need to reflect, because a lot of these patients have been through fifty five different systems, seen a lot of different people and maybe we have to reflect on well obviously we didn't get to the nitty gritty of why they're here*

The time pressures associated with physiotherapy clinical practice also had an impact on when physiotherapists advocated what they viewed as self-management, at times viewed as a means to reduce physiotherapy contact. Physiotherapists had the challenge of day to day practice being busy and self-management was a means to reduce this impact.

> *PT 3:Because of the pressures on us to not get people in every week and waiting lists down so you do feel the pressure as well for getting the patients to self manage*

> *PT10: You don't want them coming back through the door every year really do you*

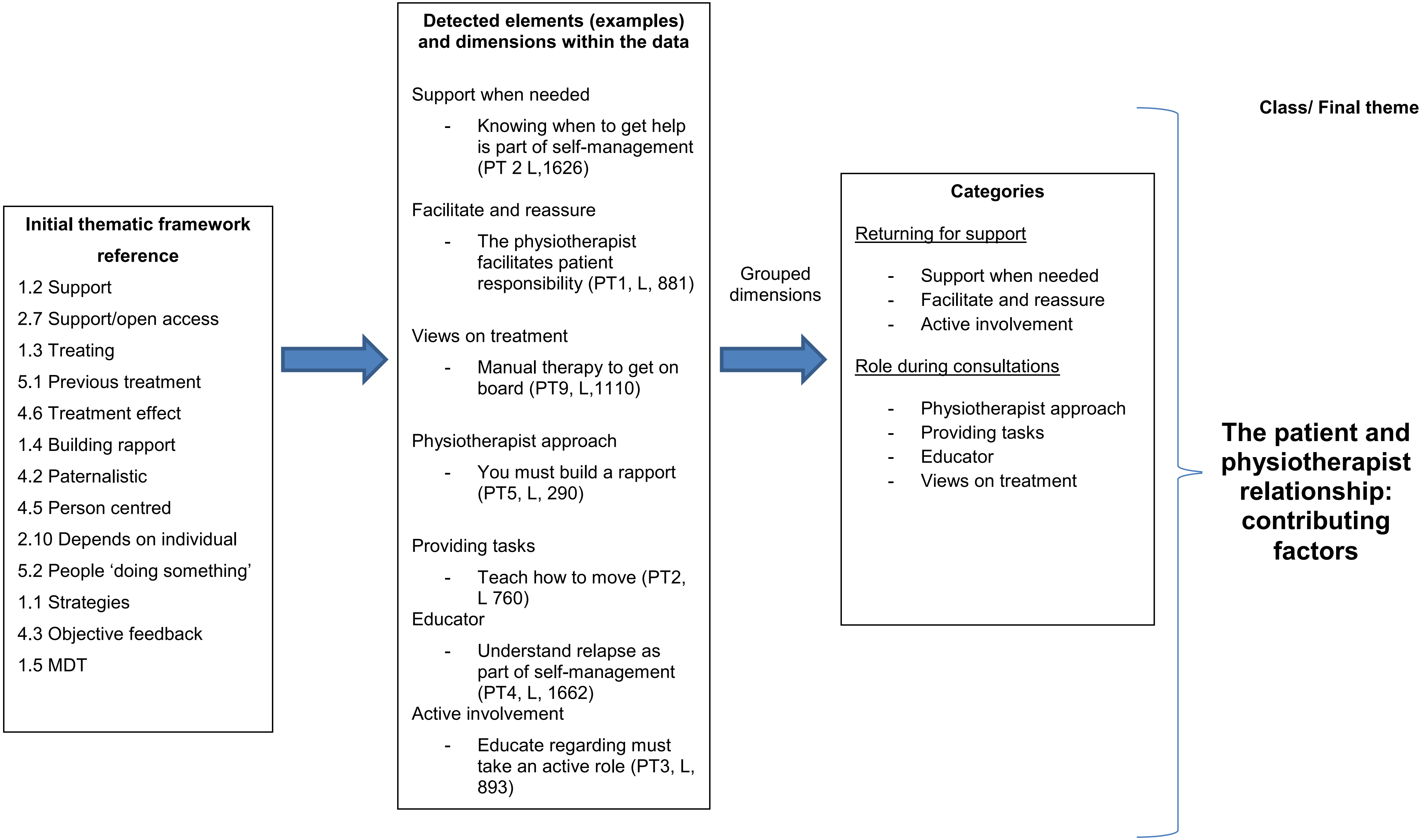
The understanding of self-management itself revealed contradictory results. It was viewed as the overall aim to achieve from physiotherapy management however was then later discussed as a way to decrease pressure to be solely the patient responsibility regardless of factors such as understanding and perceived ability.

4.4.2 The Patient-Physiotherapist Relationship: Contributing Factors

Physiotherapists felt they had an important role with regards to facilitating self-management. Their role encompassed providing people with strategies alongside providing support during and after consultations. Figure 4.5 illustrates the development of this theme. Physiotherapists felt they had a key role in providing intermittent support for self-management after a person was discharged from their care. In addition they viewed themselves as having a role in being a source of reassurance and assistance if a person has an increase in pain.

Being able to attend and see the same physiotherapists and review past discussions and progress was felt to be important. Physiotherapists recognised that pain may become to a level where people need some support and felt well placed to be able to provide this at times. A condition of this however appeared to be that the person must be seen to be actively involved or engaging in what the physiotherapists perceived as self-management.

> *PT 1: People need to manage their pain and come and see us now and again*
>
> *PT 2: Self-management involves people knowing where to go if they need further help*
>
> *PT 7: You can tell if people need more support or it they just want to get on with it, I tend to put them on open access to make them proactive in contacting me*
>
> *PT 8: (Is self-management being able to come back?) You're facilitating it*
>
> *PT 10: (Is self-management being able to come back?) You're aiming towards a better overall outcome, if they come back you're re-emphasising and guiding what to do so eventually they may not need to come back as frequently*
>
> *PT 2: The active ones who get involved with management who just need some help getting pain under control*



Initial thematic framework reference

1.2 Support

2.7 Support/open access

1.3 Treating

5.1 Previous treatment

4.6 Treatment effect

1.4 Building rapport

4.2 Paternalistic

4.5 Person centred

2.10 Depends on individual

5.2 People ‘doing something’

1.1 Strategies

4.3 Objective feedback

1.5 MDT

Detected elements (examples) and dimensions within the data

Support when needed

- Knowing when to get help is part of self-management (PT 2 L,1626)

Facilitate and reassure

- The physiotherapist facilitates patient responsibility (PT1, L, 881)

Views on treatment

- Manual therapy to get on board (PT9, L,1110)

Physiotherapist approach

- You must build a rapport (PT5, L, 290)

Providing tasks

- Teach how to move (PT2, L 760)

Educator

- Understand relapse as part of self-management (PT4, L, 1662)

Active involvement

- Educate regarding must take an active role (PT3, L, 893)

Grouped dimensions

Categories

Returning for support

- Support when needed
- Facilitate and reassure
- Active involvement

Role during consultations

- Physiotherapist approach
- Providing tasks
- Educator
- Views on treatment

Class/ Final theme

The patient and physiotherapist relationship: contributing factors

Figure 4.5: Development of: ‘The patient and physiotherapist relationship: contributing factors’ theme

> *PT 7: Going back to the self-management thing if you've got people who appear to be doing absolutely everything and they are diligent with their exercises and they're doing everything and they're still coming back to you then that's different to someone who isn't doing what you think they should be doing*

Previous treatment was frequently discussed among physiotherapists as influencing their approach with the individual. Enquiring about previous treatment allowed physiotherapists to discover the success of previous treatment and frequency of this. People who had attended physiotherapy a number of times for treatment prompted the physiotherapists to consider if the treatment they had been receiving was appropriate for their needs. At other times treatment was viewed as valuable if this were a means of helping the person manage once again.

> *P3: Somebody that comes back time and time again or has had lots of treatment you wouldn't think right im going to start to treat this person…you'd think right what I am going to do to get them to understand how to treat themselves erm successfully*
>
> *P5: Some people have had back pain for ten years haven't they and never had any treatment its just gone on and then it may be worth trying a bit of something but if they've had it like twenty odd years and seen people on and off*
>
> *P4: Whether they've had treatment before and things you kind of get if they've had treatment very successfully and that keeps them going for quite a long time then I might think right we'll do that again*

When meeting a person with LBP for the first time and aiming for self-management, physiotherapists view themselves as a facilitator. They perceive themselves as having a role in providing tasks for the person to use to manage day to day such as exercise, pacing and postural awareness. Physiotherapists viewed themselves as important in providing education regarding pain and also providing treatment as an adjunct to help people regain control of their LBP. Engaging in some form of exercise was referred to by the majority of physiotherapists and the value physiotherapists place on this regarding supporting self-management.

> *PT 1: The role of the physio is the facilitator, 99% is on the patient and we're the 1% or 10%*
>
> *PT 2: I'd be looking at what their perceptions of pain were and how they manage that pain and what they understood by pain and what they thought the pain meant to them do you think something dangerous is happening or is something healing or actually do we need to say that that pain is there for no useful reason and you need to learn how to live with it and how to manage it*
>
> *PT 3: It's our role to educate them that it is their responsibility, so at the first session that they are to play an active role*
>
> *PT 1: Alongside advice you could do some treatment, but emphasis is facilitating them in the right direction*
>
> *PT 7: (Q: what is the patient "bit" what is their role in self-management?) A lot is common sense, watching posture, lifting correctly, exercises that will strengthen them*

Although exercise was strongly advocated by physiotherapists as part of self-management and the person living with LBP demonstrating an active involvement, there was acknowledgment of some of the challenges associated with exercise. Difficulties with integrating exercise into daily life and becoming involved with this if exercise was not something people were accustomed to.

> *PT2: They're just kind of wow what was she talking about and she's clearly not listening to me, I'm in a lot of pain and she thinks I should be walking*
>
> *PT2: I think it's hard as well because physios tend to be very active, sporty kind of people …coming in at the other end of the spectrum, they're in pain and they're negative, they've never done exercise and you're saying you should be doing this, doing that, you should be out doing exercise*
>
> *PT9: Exercises themselves, particularly in these chronic patients may not necessarily be the answer so they don't want to erm, I suppose you're getting them back to do what they feel they need to do or want to do and what's important to them*

The physiotherapist approach to people living with LBP showed evident differences throughout the transcripts. Physiotherapists at times were very person centred and considered the person living with LBP context holistically. They individually tailored treatment and advocated working in partnership with the individual. However, at times the physiotherapists came across as quite paternalistic and prescriptive, dictating what the patients should do and there was not a lot of discussion regarding their involvement.

> *PT 2: effectively, you're like the expert consultant and they come for your advice* [laughs]
>
> *PT 5: I expect the patient to do what I've told them*
>
> *PT 8: I get people to make their own decisions, empowering the patients to come up with their own treatment plan, what their main problems are and grading importance of it*
>
> *PT 9: (Approaching the management of LBP) being aware of factors that may influence pain, acknowledging patient beliefs such as social and work factors, their understanding of pain*
>
> *PT 7: (self-management) rather than having the expectation that they're going to be treated and going to be passive it has to be a partnership with them, they have ownership of that problem*
>
> *PT 5: Unless you build a rapport they wont take anything you say on board*
>
> *PT 7: Its taking on board that he needs to be aware of his posture and to take erm things into consideration when he's working and introduce an exercise he hadn't done before, so going into extension and work his tummy muscles... Well, how long do you want me to do these for, well that's for life*

The relationship between the patient and physiotherapist could ultimately influence treatment outcome. Physiotherapists recognised the value of building a rapport and taking the time to develop this. This was important during the consultation and influence of this on supporting patients. The role of the physiotherapist in providing support through advice and discussion with people depended on the establishment of a good rapport.

> *P2: Unless you, unless you form a rapport with them they're not going to take anything you say on board*
>
> *PT 7: It could just be improving their understanding so they're not fearful anymore, erm and giving them confidence to do it so you might not actually need to physically treat them*

> *P9: A lot relies on our communication skills verbally and non verbally and to build rapport with the patient at the outset*

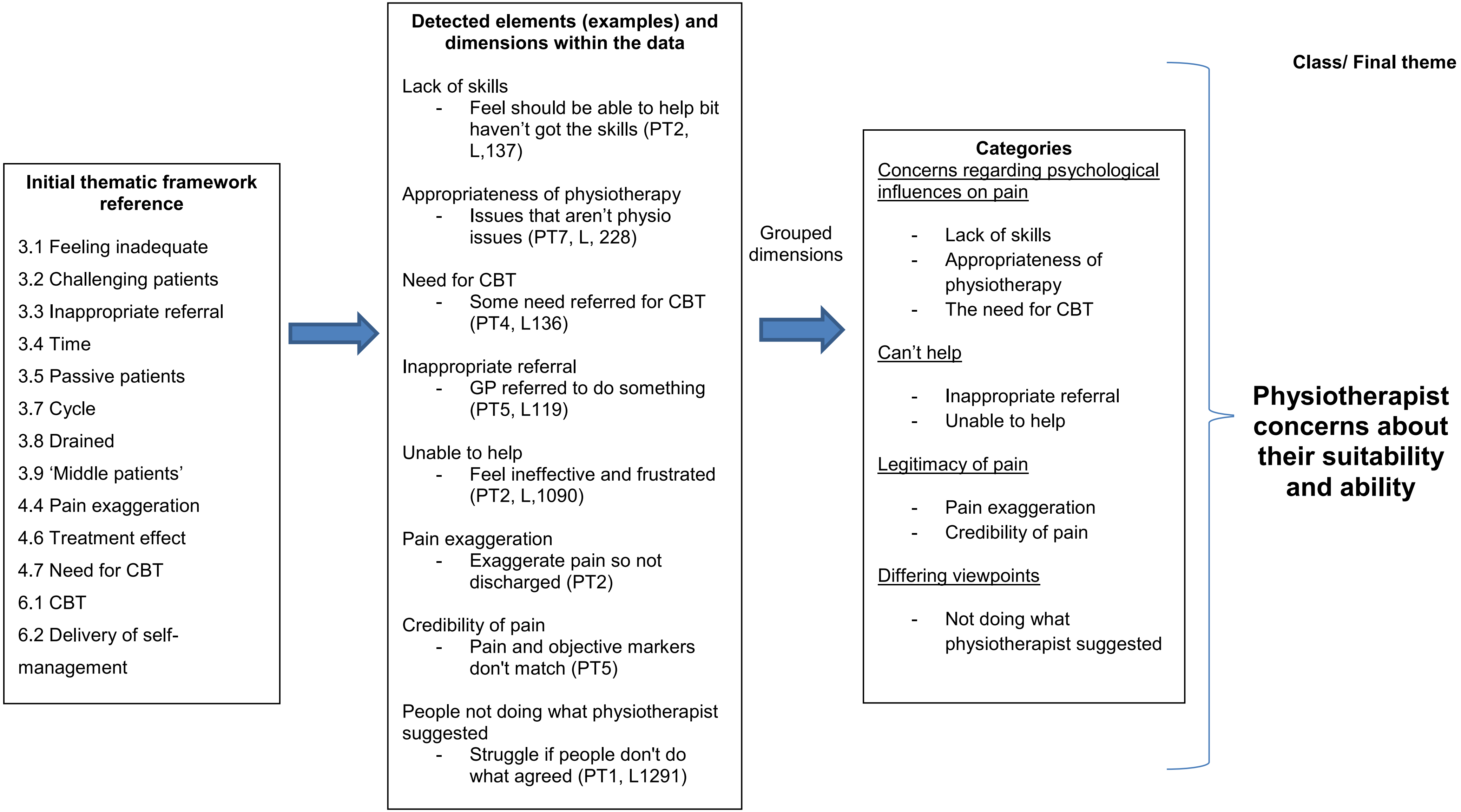
Although a partnership between patient and therapist was considered important, it was also acknowledged the role of the wider disciplinary team and the need for this even though it was sometimes not available. Multidisciplinary management was viewed as an ideal scenario rather than a reality. A range of professionals were discussed, however the most frequently cited to was referral and need for cognitive behavioural therapy.

> *P7: to have someone on site that you could just erm liase with and have a person being treated if you like concurrently from a psychological and physical point of view so that both aspects are dealt with and liase between or case meetings between the two would be the ideal which is never going to happen*
>
> *P8: It would be great wouldn't it in an ideal world to have your, like we were discussing, having your personal trainer, your dietician, your CBT counselor, your physio and you have like a case conference*

Physiotherapists ultimately felt they had a pivotal role in supporting self-management of LBP. They aimed to achieve this through building rapport, providing advice, reducing the threat value of pain and suggesting strategies such as exercises, pacing and postural awareness. Contributing to a physiotherapist patient partnership was viewed as the physiotherapist having a role in reducing the impact of pain if the person living with LBP was seen to be engaged in some strategies. A partnership was not as apparent if people had received a lot of previous treatment and were seen as not being involved with management.

4.4.3 Physiotherapists Concerns About Their Suitability and Ability

During the focus groups conducted with physiotherapists, a key focus of the discussion involved the difficulties they encountered with regards to personal beliefs regarding their suitability and ability to help people with LBP. Further to this, the challenges physiotherapists' felt they faced with this client group was highlighted. Figure 4.6 details the development of this theme.



Initial thematic framework reference

- 3.1 Feeling inadequate
- 3.2 Challenging patients
- 3.3 Inappropriate referral
- 3.4 Time
- 3.5 Passive patients
- 3.7 Cycle
- 3.8 Drained
- 3.9 'Middle patients'
- 4.4 Pain exaggeration
- 4.6 Treatment effect
- 4.7 Need for CBT
- 6.1 CBT
- 6.2 Delivery of self-management

Detected elements (examples) and dimensions within the data

Lack of skills
  - Feel should be able to help bit haven't got the skills (PT2, L,137)

Appropriateness of physiotherapy
  - Issues that aren't physio issues (PT7, L, 228)

Need for CBT
  - Some need referred for CBT (PT4, L136)

Inappropriate referral
  - GP referred to do something (PT5, L119)

Unable to help
  - Feel ineffective and frustrated (PT2, L,1090)

Pain exaggeration
  - Exaggerate pain so not discharged (PT2)

Credibility of pain
  - Pain and objective markers don't match (PT5)

People not doing what physiotherapist suggested
  - Struggle if people don't do what agreed (PT1, L1291)

Grouped dimensions

Categories

Concerns regarding psychological influences on pain

- Lack of skills
- Appropriateness of physiotherapy
- The need for CBT

Can't help

- Inappropriate referral
- Unable to help

Legitimacy of pain

- Pain exaggeration
- Credibility of pain

Differing viewpoints

- Not doing what physiotherapist suggested

Class/ Final theme

Physiotherapist concerns about their suitability and ability

Figure 4.6: Development of 'Physiotherapist concerns about their suitability and ability' theme

If physiotherapists believed that a person was influenced by psychological factors or issues contributing to their pain they expressed concerns regarding a lack of training and skills in addressing these perceived issues. Referring to ‘yellow flags’ was frequent. Physiotherapists appeared to feel limited in their ability to help this group of people. They felt some people had barriers they could not address and psychological issues dominated their pain experience. Physiotherapists often explicitly stated they do not have the skills. A feeling that physiotherapists should be able to help this client group prevailed, however the majority of physiotherapists felt this was a challenge.

> *PT 2: We haven’t really got the tools to do anything (in response to discussion regarding person with ‘yellow flags’)*
>
> *PT 3: I think back to my training at university I think I had an hour of psychology for a term, so we don’t have the skills*
>
> *PT4 :I suppose it depends on what we’ve discussed, trying to get to the ideas of what they struggle with and is it that they need things like pacing, or is it that we can address some of those barriers and sometimes like you say the more you talk about them, the more you feel like I’m out of my depth here*

Physiotherapists frequently questioned their suitability to deal with a client group who presented with issues they felt were not physiotherapy issues. These included ‘barriers’ with regards to managing pain where physiotherapists felt unable to address and that ‘yellow flags’ or aspects involving psychology may not be appropriate for physiotherapy. Physiotherapists could feel in a difficult situation of not feeling the most appropriate person to support certain individuals. Although frequently the person’s problems were related to their pain.

> *PT2: She just needs somebody to listen to her and physio isn’t the right place*
>
> *PT 4: How do you challenge people’s beliefs about that are so engrained into their problem, that they’re going to have to reopen it all*
>
> *PT5: If had lots of treatment is physio what they need*

> *PT 7: You often feel inadequate or lacking in erm, the kind of, psychological side of it… If they have been through all the physical things…then you're having to look at how you're going to progress is that necessarily a physiotherapy issue, erm, getting into managing something that's on going is it more of a psychological problem and how are we equipped to deal with that do we need more erm awareness, do we need more training to look at that side of it*

Some physiotherapists discussed addressing physical issues and physiotherapy aiming to target some of these influences. At times, consideration of posture or stiffness influenced the physiotherapist approach. During some discussions a biopsychosocial approach was not evident and structural based approaches were the focus. However, at times it was recognised the wider implications of treatment and structural was not the unanimous view and the limitations of a structural based approach was considered.

> *P7: If they're recurrent discs and its an acute flare up we'll just concentrate on doing McKenzie type things only and then get them to come back in two weeks and hopefully that will have settled then we can move on to get them doing more core stability and beginning to do some more mobilising*
>
> *P10: You get some postures that come through the door and you think I'm never going to do anything for this person, when actually if they work on what you've talked about then they can do it*
>
> *PT 8: You're sometimes treating the mind aren't you and not the body by doing hands on which is just as important maybe*
>
> *P9: I think the hands on, hands off debate…sometimes you use it a little bit to try and get them on board for other bits don't you? Try and not attribute the success of the hands on because I think it has an important role*
>
> *P9: There's a real conflict what your beliefs are, so you might think, simple low back, disc, you're fine, that patient might be thinking my god*

At times physiotherapists reported they may not be an appropriate route for people living with LBP. This was following the discussion regarding feeling inadequate regarding psychological factors physiotherapists frequently referred to the need for cognitive behavioural therapy and how this may help people with pain and how they may need training in this area.

Physiotherapists demonstrated a lot of belief for the benefit and need for cognitive behavioural therapy and the real need for this intervention.

> *PT 2: I think CBT is needed as well as everything else as CBT will give them the strategies to do their daily tasks or to help them get back to work or to help them manage their work day*
>
> *PT 5: Maybe one of our in service trainings we should get someone from CBT*
>
> *PT 9: Our training is quite biomedically led…psychosocial area is something we all need, I believe we need a lot more training in*

Following further discussion regarding the need for CBT and how this would help with management, physiotherapists raised and issue with regards to time to implement this. CBT was seen as separate and potentially time consuming thus questioning of the applicability of this in physiotherapy practice. This was seen as an isolated approach to try to implement in clinical practice.

> *PT 3: We haven't got time to talk to people (*related to CBT)
>
> *PT 5: We haven't got time to go the whole CBT approach*
>
> *PT 8: Difficult to have time to do that*

In contrast to the dominant view of challenges faced regarding psychosocial factors, one physiotherapist highlighted that physiotherapists were well placed to address some of the barriers and issues discussed. Another, recognised the potential role of the physiotherapists in addressing some psychosocial influences such as attitudes and beliefs, however again, time could often be perceived as a barrier for this. The physiotherapist role in being in a position to begin to consider attitudes and beliefs during a consultation highlighted potential.

> *PT 9: In some ways physiotherapists are in a good position to help these patients… there are certain patients who have issues I agree that they do need referred on but I think where you have got some of the basic skills you might be able to address some attitudes and*

> *beliefs. If you don't address these people cant move on and I think we are in a position where we can help a lot of these patients*
>
> *P8: I think the first time you see them it's important, with the ones that are recurrent or come through the system all the time, or chronic, is getting a good history off them, finding out what they've had already, what investigations they've had, what their beliefs are that they've got, erm, so that you can establish whether theres actually, whether there's some gaps that haven't been investigated so that they feel that they've been able to express all their views, and there's no gaps that they need to explore further before you go down the route that this chronic and it needs more sort of management in terms of their beliefs and attitudes.*

Alongside psychological issues and barriers identified as a challenge by physiotherapists they often felt frustrated and unable to help this client group. With regards to their frustration, this involved questioning themselves and feeling they should be able to help this client group. However in other cases there was some blame apportioned towards general practitioners whereby physiotherapists felt at times they do not know how to manage this client group so refer to physiotherapy to be seen to be doing something.

> *PT 2: I just feel we're being ineffective which is really frustrating*
>
> *PT 4: Middle people are frustrating because you feel like I know what you need but I cant help you*
>
> *PT 2: It's almost like you feel like they're referred because the GP is sick of seeing them*
>
> *PT 5: I've had one of those the other day and rang up the GP and they said well we just referred them to you to show that we were doing something*

With regards to focusing on themselves as a potential reason why there are struggles managing people with LBP, physiotherapists at times also commented on the possibility of the patient being the reason with regards to difficulties with management. Physiotherapists questioned at times the credibility of the person's reporting of their pain and how if they were not prepared to be 'actively involved' or engage in advice from physiotherapists then it was limited what the physiotherapists could do.

> *PT 5: I've seen someone look at them and think your symptoms or your objective markers don't match*
>
> *PT 5: They think their pain is worse than it is*
>
> *PT 1: If people come back and haven't done what we agreed I struggle with that.*
>
> *PT 2: If the person isn't actually in a position where they're going to change, how do we change that?*

4.5 Discussion

This study has expanded the knowledge base regarding physiotherapists understanding and approach to self-management of LBP. Multiple guidelines and studies advocate self-management for LBP (May, 2010; Cooper, Smith & Hancock, 2009; National Institute for Clinical Excellence, 2009). This consensus to encourage self-management was reflected within this study exploring physiotherapy practice by physiotherapists who viewed self-management as their overall aim when working with someone living with LBP. Self-management is engrained as something to aim for and what physiotherapists want people to achieve. When physiotherapists discussed self-management being their ultimate aim, there was an unspoken shared understanding among the group of what self-management was. This shares similarities with guidelines that often assume a common understanding of self-management with little elaboration (Cameron & Stewart, 2011).

A consensus among the physiotherapists was self-management being the responsibility of the individual living with LBP, however physiotherapists also felt they had an important role in supporting self-management. Chapter 1 examined current definitions of self-management and each indicated self-management being the patient responsibility. The importance of the role of the healthcare professional in supporting self-management for people living with chronic conditions is reported within the literature encouraging this involvement (Dwarswaard *et al.* 2015;Stewart *et al.* 2014). However these studies have focused upon multiple pain conditions or chronic conditions rather than being specific to LBP. In the context of supporting self-management from a physiotherapist perspective, the qualitative synthesis (chapter 3) revealed physiotherapists felt they had a role in education and support in self-management (Harman *et al*. 2014; Jeffrey & Foster, 2012;). However, detail was limited in one study (Jeffrey & Foster, 2012) and although Harman *et al.* (2014) provided further detail regarding support, this was one physiotherapist view in the context of a military population. Within the current study, physiotherapists clearly felt they had an important role in supporting people living with LBP to manage the impact of their pain on daily life and to be a source of reassurance if symptoms were to worsen. Alongside this physiotherapists valued the use of education with regards to pain and exercise. Physiotherapists in this study felt due to the fluctuating trajectory of LBP that they should provide intermittent support when required and that part of self-management was the person living with LBP accessing this. Generic approaches to self-management have advocated a partnership approach to care and people living with a condition being able to negotiate their healthcare (Lorig, Halsted & Holman 2003). This study develops the literature focusing on generic self-management or pain self-management support through gaining understanding specifically focusing on LBP from the physiotherapist perspective. In addition, the current study develops understanding of support in the context of self-management with regards to when physiotherapists would support people living with LBP in self-management.

The current study has brought to the forefront some differences in when a physiotherapist would support people living with LBP in self-management and why physiotherapists may advocate self-management. The meaning and use of self-management differed depending on the situation. One view from this study is that self-management is empowering the person living with LBP to be in control of their pain, understand their condition, manage flare ups and being able to seek support when needed. This view of self-management shares similarities among studies exploring core components of self-management (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009). In contrast, self-management has been highlighted as something that was used when physiotherapists felt all options had been exhausted with regards to supporting the individual living with LBP. It was then up to the individual to manage as the physiotherapists felt they had tried everything they could. The use of self-management in this case was being viewed solely as the patient responsibility and disregarding the role of support, control and understanding.

This finding has similarities with Josephson, Hedbery & Bulow (2013) a study in Sweden of physiotherapists (n =21) utilising focus groups to understand the management of challenging LBP cases. People living with LBP perceived as having a complex presentation may be told to take responsibility and the physiotherapists were viewed as relinquishing responsibility due to uncertainty (Josephson, Hedbery & Bulow, 2013). Physiotherapists were seen as either collaborating with the patient through advocating responsibility or at times removing their professional responsibility and leaving this with the patient without consideration of ability (Josephson, Hedbery & Bulow, 2013). The current study develops this finding in the context of self-management, and the use of the term within this sense of surrendering responsibility when physiotherapists feel they do not know how else to proceed. It is important to address this in clinical practice as if self-management is viewed as a last resort, this does not reflect its aim to manage the biopsychosocial impact of a condition in day to day life (Stewart *et al.* 2014; Barlow *et al.* 2002). At times self-management is being used when it is felt all options have been exhausted or the physiotherapist is uncertain how to provide support and thus the only component that is applied is patient responsibility.

The review by Kendall *et al.* (2011) focusing on the assumptions towards self-management uncovered a healthcare professional stance of superiority and directing blame towards the person living with a condition if they were not complying with what the healthcare professional felt was appropriate. As a consequence this could increases risk of people living with a condition being treat differently by healthcare professionals if they are viewed as difficult or not adhering to what a healthcare professional views as best

(Kendall *et al.* 2011). The current study found physiotherapists preference for providing support for self-management for people who were seen as having an active role in management. Daykin & Richardson (2004) referred to ‘good’ people to treat who are seen as being engaged with what the physiotherapist recommended, and Sanders *et al.* (2013) highlight physiotherapists may not fully address concerns of those not following advice. Physiotherapists within the current study viewed psychosocial issues as barriers to progress and portrayed the most uncertainty with regards to this.

Physiotherapists reported uncertainty and questioned their suitability and ability to support people living with LBP who they perceived to have psychosocial influences on their pain. The physiotherapists did not explicitly state what was meant by psychosocial, however referred to beliefs influencing outcome and feeling they did not have the skills to support this client group. Alongside this, physiotherapists discussed psychosocial influences as a separate entity with regards to the pain experience. A study by Simmonds, Derghazarian and Vlaeyen (2012) found physiotherapists opt for a biomedical treatment when faced with uncertainty. However as Foster and Delitto (2010) state the position physiotherapists are in is ideal to work within a biopsychosocial manner. The uncertainty physiotherapists felt with regards to supporting some people living with LBP to self-manage presents a paradox. If physiotherapists are unsure about the person’s problem and how to support them, and the person living with LBP is consulting a physiotherapist for support, it is unclear how the patient will understand their problem and be able to manage this.

The findings regarding physiotherapists considering they did not have the skills to support some people living with chronic LBP was frequently discussed in the current study. This is not a new finding and concurs with other qualitative studies in which physiotherapists were interviewed regarding their views (Sanders *et al.* 2013; Slade, Molloy & Keating, 2012). There is growing recognition within the literature of the unease physiotherapists feel in supporting people living with LBP they feel to have psychosocial influences on their pain experience (Singla *et al.* 2014; Sanders *et al.* 2013; Jeffrey & Foster, 2012; Daykin & Richardson, 2004). The findings from this study share some similarities with Daykin & Richardson (2004) study regarding physiotherapists' pain beliefs. Physiotherapists had categorised good patients as actively involved and not demonstrating psychological influences, whereas difficult patients were seen as passive and having psychological influences on their pain experience which physiotherapists felt should be referred to other healthcare professionals (Daykin & Richardson, 2004). Psychological influences in this context were felt to suggest a complex presentation not compatible with a biomedical model of treatment and represent poorer outcome. The study by Daykin and Richardson (2004) has similar findings regarding physiotherapists questioning their suitability to support people with who they deemed to have psychological influences on their pain. Although at times within the current study a structural explanation and treatment of pain was given this was not the only focus as often physiotherapists appreciated a biopsychosocial approach was needed and tried to address some of the psychological factors related to the pain experience, however reported finding this difficult. This aspect of the study shares similarities with Sanders *et al.* (2013) who found psychosocial factors were acknowledged as requiring consideration however physiotherapists lacked confidence when they felt this was a problem. A key finding of physiotherapists discussing the psychological and biological aspects as separate is a prominent finding within the literature exploring physiotherapist perceptions (Singla *et al.* 2014; Sanders *et al*. 2013; Jeffrey & Foster, 2012).

The qualitative study by Sanders *et al.* (2013) conducted a secondary analysis of qualitative data from 12 physiotherapists who had taken part in a national survey. The data was reanalysed with the biopsychosocial framework guiding the analysis process. Jeffrey and Foster (2012) included the same physiotherapists as Sanders *et al.* (2013) thus similar findings were reported regarding finding people who did not want to be involved with managing their LBP challenging and focusing on the mechanical aspects of LBP. Sanders *et al.* (2013) appear to develop the concepts presented in

Jeffrey and Foster (2012) further. Jeffrey and Foster (2012) are accepting of physiotherapists using anatomical models and postural reasons for LBP as an explanation to people living with LBP of reasons for their pain. Sanders *et al.* (2013) recognized that the physiotherapists focused on mechanical factors and reveal the difficulties and apprehension physiotherapists had regarding psychosocial factors.

A focus specifically on assessment of psychological status was carried out by Singla *et al.* (2014) who recruited 9 physiotherapists working in private practice in Australia to participate in semi structured interviews. Singla *et al* (2014) revealed an uncertainty among physiotherapists of what was meant by psychosocial and physiotherapists felt they had limited training in this area, with the latter concurring with the current study, Sanders *et al*. (2013) and Daykin and Richardson (2004).

Physiotherapists within the current study and extant qualitative studies often separate the physical and psychological aspects of a pain experience (Singla *et al.*2014; Sanders *et al.* 2013; Jeffrey & Foster, 2012; Daykin & Richardson, 2004). A prominent and recurrent feature throughout the focus groups in the current study was that physiotherapists felt cognitive behavioural therapy was required for people living with LBP. However, the separation was still apparent as cognitive behavioural therapy was seen as something separate and often for the person living with LBP to seek support elsewhere or receive this separately from physiotherapists.

In contrast, a study by Smart and Doody (2007) explored the clinical reasoning of pain by musculoskeletal physiotherapists, and found reasoning to be multidimensional and integrate psychosocial reasoning. However, this study recruited physiotherapists with more than ten years experience and post-graduate training, which the authors acknowledge may influence findings gained. This poses the question of the value of postgraduate education for physiotherapists.

Although at times physiotherapists may question the credibility of LBP, the major focus was on themselves and personal beliefs about their training and capability and how this could be improved. At times physiotherapists felt they were faced with challenges and were uncertain if they had sufficient training to successfully support some people living with LBP, particularly in relation to what they perceived psychosocial or ‘yellow flag’ influences. Training for healthcare professionals specifically regarding self-management such as goal setting, problem solving (Newman, Steed & Mulligan, 2004) and maintaining self-management practices of patients is advocated within the literature (Barlow *et al.* 2002). However, these studies do not specify which professional and stipulate a generic approach to self-management training. The current study provides some insight into the educational needs of physiotherapists to support self-management of people living with LBP. Physiotherapists also perceived patient beliefs regarding pain to be a barrier to self-management and those who chose not to be actively involved in the management of their LBP. Physiotherapists felt training regarding cognitive behavioural therapy may facilitate themselves to support self-management of LBP. However, following this physiotherapists felt time may present a barrier, thus were uncertain of this approach. This highlights the need for integration of the biopsychosocial nature and impact of LBP in the clinical setting is required and education regarding this.

Within the literature focusing on physiotherapist perspectives of LBP, studies advocate education to support physiotherapists to integrate the psychosocial and physical management within the clinical consultation (Singla *et al.* 2014; Sanders *et al.* 2013). This is important for self-management, as LBP is a biopyschosocial experience, thus physiotherapists must consider modifiable influences on a pain experience including psychosocial factors. The qualitative synthesis conducted by Snelgrove and Liossi (2013) advocate training regarding the impact and biopsychosocial nature of LBP for healthcare professionals. This was recommended through biomedical beliefs predominating the understanding of people living with LBP. This review focused on patient perspectives and author recommendations. The current study concurs with this review, demonstrating from a physiotherapist perspective that the pain experience is not always integrated. Furthermore, this study also uncovered some challenges from the physiotherapist perspective that they can face when supporting people with self-management of LBP. Through current literature recommendations and the current study it is clear education regarding the biopsychosocial nature of pain and integration of this into the clinic is required. Education and information provision regarding pain is a frequently cited component of self-management (Stewart *et al.* 2014; Carnes *et al.* 2012). As discussed, LBP is biopsychosocial and self-management is not only related to pain, but managing the emotional and daily impact (Stewart *et al.* 2014) thus within physiotherapy clinical practice, this must be reflected and currently there remains some challenges in this area.

Within the current study physiotherapists valued the use of exercise in supporting self-management. Self-management in relation to chronic pain and LBP often involves an element of physical activity (Carnes *et al.* 2012). Exercise was a prominent means of how physiotherapists encouraged self-management and at times they associated people as being involved with self-management as doing exercise. The qualitative synthesis (chapter 3) discussed this as a main finding regarding the current literature on physiotherapists experiences of self-management of LBP. Exercise and self-management have been used interchangeably in studies (Liddle, Baxter & Gracey, 2007; Dean *et al.* 2005; Cook & Hassenkamp, 2000). A qualitative study by Dean *et al.* (2005) interviewed both physiotherapists and people living with LBP about their experience of exercise and this demonstrated the key role physiotherapists felt exercise played and that this is necessary for self-management. Studies focusing on the physiotherapist perspective found they may use exercise to encourage movement and recovery and to reduce the threat of worsening (Sanders *et al.* 2013). Whilst this may be an important aspect of self-management, there is the opportunity to develop understanding of the integrated nature of pain into the clinic. Physiotherapists found people who chose to not be actively involved with management challenging and as presented in two current qualitative synthesis of patient perspectives people understand pain biomedically

(Bunzli *et al.* 2013; Snelgrove & Liossi, 2013). Alongside this, self-management is consistently viewed as having multiple components (Miles *et al.* 2011; Carnes *et al.* 2012) thus, providing physiotherapists with education may develop integration of education and confidence with modifiable psychosocial factors in supporting people with LBP to self-manage.

The studies discussed regarding challenges faced with psychosocial issues (Sanders *et al.* 2013; Daykin & Richardson, 2004) and the LBP consultation (Josephson, Hedberg & Bulow, 2013; Slade, Molloy & Keating, 2012) although their findings had similarities with the current study, their focus was not self-management. Difficulties and challenges faced with the biopsychosocial impact of LBP resounds not only in the current study but also within literature of physiotherapist experiences from both the UK and other countries. It is clear physiotherapists themselves require support in order to support people living with LBP. If physiotherapists are finding some people living with LBP challenging to support, consideration must be given to those people living with LBP if they face the same challenges. As informed by this study and extant literature future research is needed to educate physiotherapists and integrate the biopsychosocial pain experience.

The dominance of difficulties faced with factors viewed as psychosocial is clear within the current study and physiotherapy literature. Snelgrove and Liossi (2013) made the eloquent point that if there is a biomedical view of a biopsychosocial problem such as LBP then people are not being given the best chance for self-management. The current study has developed this point illuminating at times the lack of integration of the pain experience by physiotherapists themselves who may be supporting self-management. If this is the case it would appear prudent to address this dichotomy through educational support provided to physiotherapists.

Chapter 5

5. Are People with Chronic or Recurrent Low Back Pain 'Self-Managing'?

5.1 Background

The qualitative synthesis (chapter 3) has provided valuable findings to inform this phase of the study. There have been some studies conducted in which participants living with LBP have been recruited from the UK NHS with self-management being either a theme or focus of the study. Two UK based studies focused on self-management following a structured education programme and provided recommendation for their specific programmes to consider the broader context of LBP and incorporating ways to address psychosocial influences (Morris, 2004; Cook & Hassenkamp, 2000). However, this was a focus following a specific programme rather than living day-to-day with LBP.

Whilst a physiotherapy focused study by May (2007) explored the impact of LBP through interviews with people living with LBP and uncovered challenges people face when pain returns, self-management is discussed separately as strategy focused and people desiring independence. Their focus was regarding the independence associated with self-management which conflicts with Cooper, Smith and Hancock (2009) view as there being a need for support. Thus, there are differing viewpoints in the literature related to physiotherapy of whether support is required for self-management. Cooper, Smith and Hancock (2009) solely focused on self-management of LBP and their study was carried out in a UK NHS Trust. While this study provided valuable insight into the self-management of LBP their questioning and focus was specifically the physiotherapy role in self-management and physiotherapy support dominated the discussion. Whilst exploring the physiotherapy influence on self-management of LBP is an aim of the current study it is not the sole focus, with self-management being considered in a wider perspective, considering people living with LBP and their day to day life and managing the impact of this experience. Further, telephone support and direct access dominate the discussion surrounding physiotherapy support (Cooper, Smith & Hancock, 2009). Thus demonstrating a specific emphasis, rather than the overall influence of the physiotherapist. Cooper, Smith and Hancock (2009) also provided a limited focus on those who were deemed ‘not self-managing’ and this area warrants further investigation. The qualitative synthesis conducted (chapter 3) referred to some difficulties people faced with self-management of LBP, however this was not explored in great depth.

A commonality throughout the qualitative synthesis (chapter 3) is self-management being a separate theme and often having limited links with the wider discussion of living with LBP. It is often viewed as carrying out a task with this most often being exercise. There were some exceptions found. MacKichan, Paterson and Britten (2013) provide insight into self-care practices of people living with LBP, with capability to engage in this a pertinent point, not explored in other studies. However, their focus was on general practitioner support versus autonomy. One study by Tvieto *et al.* (2010) considered self-management in the wider context of managing the work day, considering managing situations and the impact of pain, alongside task focused strategies demonstrating a more holistic view. This holistic view is thus warranted to consider in relation to LBP. Snelgrove and Liossi (2013) qualitative synthesis conclude a struggle is apparent for people managing daily living and social life. However this contrasts with current physiotherapy focused studies exploring self-management, as exercise and tasks appear to dominate the discussion. Exploration of self-management of LBP in consideration to day-to-day life wider impact is thus required.

5.2 Aims

- To explore people living with LBP understanding and experiences of self-management of LBP to consider if they are able to self-manage the bio psychosocial impact of low back pain

- Explore the role of the physiotherapist in self-management of LBP from the patient perspective

5.3 Methods

5.3.1 Design and Sampling

A qualitative design utilising semi structured interviews was used. Individuals living with LBP who had attended physiotherapy were recruited from two physiotherapy outpatient departments in two different locations within one NHS Trust. An administration assistant who was involved in the recruitment process invited individuals who met the inclusion criteria (table 5.1) through posting a participant information sheet (Appendix 5) and an invitation letter (Appendix 6). If the invited individual wished to take part in the study they were requested to return a reply slip detailing their name and contact number in a pre-paid envelope provided. Eleven replies were received. Those who responded were then contacted by telephone to arrange an interview date at a choice of two NHS locations that was convenient for the participant. One participant was unable to be contacted; therefore they did not take part in the study. Participant travel expenses were reimbursed if required.

During recruitment the decision was made to exclude participants who were currently receiving physiotherapy. This decision was made due to being unsure about the outcome for some people, such as onward referral for further investigation or spinal surgery. It was also felt that it might impact on going physiotherapy if people were interviewed mid way through this process.

Table 5.1: Inclusion and exclusion criteria for interviews

Inclusion	**Exclusion**
Over 18 years of age	Current pregnancy
LBP with or without radiation persistent for greater than 12 weeks (Liddle, Baxter & Gracey, 2007) or recurrent episodes of LBP (3> in last 12 months)	Unable to understand English
Received physiotherapy for low back pain in the last 6 months (Cooper, Smith & Hancock, 2008).	Any spinal surgery in the last twelve months
	Evidence of spinal cord or cauda equina compression, severe spinal stenosis indicated by signs of neurogenic claudiacation, grade 3-4 spondylolythesis, fibromyalgia or systemic/ inflammatory disorder
	Currently receiving physiotherapy

Maximum variation sampling was used to recruit participants. Maximum variation sampling is a type of purposive sampling suitable for qualitative research due to the potential for diverse perspectives to be gained and can enhance the credibility of the sampling process (Creswell, 2007). The letters were sent in five stages to allow targeted letters to be sent with the aim to gain a variation in perspectives including age, gender and discontinued attendance (Cooper, Smith & Hancock 2008). Alongside this, the study also aimed to capture a variation in the length of time the participants had lived with LBP to explore any difference in self-management practices as some studies have stated that self-management related to time and experience (Liddle, Baxter & Gracey, 2007; May, 2007). An effort was made to include those who had stopped attending physiotherapy without an explanation however no replies were received from this population. Table 5.2 details the demographic data for participants included in the study.

Table 5.2: Sample characteristics

Participant	Age	Sex	Length of time living with LBP	Currently have LBP
1	58	Female	1-2 year history	Yes
2	61	Female	20 year history	Yes
3	42	Male	8 year history	Yes
4	68	Male	20 year history	No
5	32	Male	3 year history	Yes
6	76	Female	30 year history	Yes
7	42	Female	20 year history	Yes
8	74	Female	9 month history	Yes
9	53	Male	4-5 year history	Yes
10	72	Male	2-3 year history	No

5.3.2 Data collection

Prior to the interview commencing the principal researcher (JM) allowed time to discuss the participant information sheet that the participants had received to clarify understanding and allow participants to ask any questions before the interviews commenced. All participants provided written informed consent before the interview; the form used is detailed in Appendix 7. The principal researcher carrying out the interviews was not working as a physiotherapist at the time of interviews. It is felt a benefit to the study having a physiotherapist carry out the interviews, due to having experience working as a physiotherapist, which allowed natural conversation to occur due to an informed understanding of areas being discussed. However it is important to recognise the influence of the researcher on this process, in this case the professional background (Mays & Pope, 2000). The principal researcher had not worked with any of the participants interviewed.

Individual semi-structured interviews were carried out with each participant. An interview guide was used regarding topics that needed to be covered; a guide was chosen to be flexible to allow new areas of interest to be explored while retaining some structure (Patton, 2015). The study had specific aims to explore, thus some structure was required, however this did not want to restrict exploration of new ideas, making semi structured interviews with an interview guide an ideal method of data collection.

An interview guide was prepared with a series of areas the interviews aimed to cover. Self-management was explored in relation to the biopsychosocial model due to its fundamental role in understanding chronic pain and links with current definitions of self-management. The participants' daily lives and feelings regarding LBP were explored considering self-management. The principal researcher enquired about any concerns for the future, which has the potential to influence the focus of the conversation. This guide was informed through the holistic definitions of self-management, being mindful of a biopsychosocial framework. The interviews aimed to explore people's day-to-day life living with LBP, considering the biopsychosocial impact of this and their understanding and management of LBP with reasons for their approach. Alongside this the influence of physiotherapy on self-management aimed to be explored. Although the impact of physiotherapy was important for the aims of this study to explore, it was not the sole focus of questioning, it was important to gain an understanding of day to day life living with LBP and if people were able to manage this impact.

The interview guide aimed to provide some structure, but to be flexible enough to not inhibit the flow of natural conversation and allow topics to be discussed as they emerged (Patton, 2015). The interviews were carried out in a private room in two NHS locations. Interviews lasted between 9:05 minutes and 40.05 minutes with an average time of 23.17 minutes. The principal researcher carried out all of the interviews, which were digitally recorded and then transcribed.

5.3.3 Data analysis

The Framework method of analysis was used to analyse the qualitative data generated for this study. Data analysis occurred alongside data collection. The priori topics that were used to initially guide the thematic framework were informed by the aims of the study. The themes and the sub themes detailed developed through reading the transcripts and the other major themes developed, as this process was on-going.

5.4.3.1 Familiarisation

Familiarisation of the transcripts began from the first interview to explore topics covered and areas that may need further exploration. Figure 5.1 detail the areas revealed from familiarisation of the ten interview transcripts. The impact of LBP on restricting daily life was prominent theme at this point.

Figure 5.1: Familiarisation: Areas of inquiry for theme development

- Some participants avoid activity as feel may exacerbate pain
- Some participants were unsure why they had low back pain and what to do about this
- Concerns about pain returning and worsening in the future
- Pain stopping doing activities that people enjoy
- Some people discuss learning to live with pain and trying to not let this impact on day to day life
- Exercise is the most frequently discussed strategy with varying success impacting pain and daily life
- Physiotherapists provided exercise and people would return to physiotherapy if their pain increased

5.4.3.2 Thematic Framework

Development of the thematic framework occurred through familiarisation, emergent themes and the topic guide. The thematic framework was applied to each transcript as it was developed, with refinements frequently occurring (see figure 5.2).

Framework analysis is not a linear process (Ritchie, Spencer & O’Connor, 2003) and throughout the process some refinement was necessary. Theme 1 which was termed ‘influencing factors for self-management’ contained ‘time’ which had three quotes from participants discussing learning to live with pain and this theme was included in strategies so was thus merged. The sub theme ‘no choice’ was also contained within this theme and was merged with ‘live with it’ in strategies as the viewpoints shared commonalities.

As the data analysis progressed it was clear that there was overlap between some of the themes. Therefore some themes were reorganised. Initially there was a theme; theme 2 termed ‘recurrent nature’ which was merged with other themes. ‘Intermittent physiotherapy’ (10.2) was moved to role of the physiotherapist as this was felt to link with their role. ‘LBP recurrent’ was moved to daily life to link with the day to day impact of LBP. ‘Worse over time’ moved to understanding of pain as this view was echoed among participants that this was going to happen. Theme 9 ‘Exercise’ contained the role and use of exercise. This was merged with exercise under strategies as this was felt to link to this heading rather than being a stand alone theme. Theme 8 ‘self-management impressions’ contained ‘short term’ this sub theme was felt more appropriate relating to the goal of managing alongside other themes, which had initially been contained in ‘other’. 10.2 ‘future physiotherapy’ was merged with ‘intermittent physiotherapy’ as covered similar topics.

5.4.3.3 Data management: Charting

Charting involved creating matrix-based charts for each theme detailed in the thematic framework. At this stage it began to emerge that certain participants were expressing greater distress and difficulty living with LBP which notes were made to further explore during development of categories and higher order themes.

5.4.3.4 Developing Categories and Themes

Within each theme the development of elements, dimensions, categories and themes are detailed to allow the reader to see clearly how the themes were developed. In order to provide a clear audit trail the participant reference were detailed in brackets to allow ease of tracking back to where in the original transcript the point was discussed (Spencer *et al.* 2014). The elements and dimensions provide an explanation of what the themes in the thematic framework were highlighting and categories and themes at a higher level of abstraction (Spencer *et al.* 2014).

Participant views on the role of the physiotherapist

3.1 Provide exercises
3.2 Onward refer
3.3 Provide treatment
3.4 Physiotherapy no help
3.5 Provide explanation
3.6 Expectation to fix problem
3.7 Reduce pain
3.8 Provide support
10.2 Intermittent physiotherapy

Strategies

4.1 Exercise
  Role of exercise
  Use of exercise
4.2 Medication
4.3 Functional activity
4.4 Pacing
4.5 Ignoring pain
4.6 ‘being sensible’
4.7 ‘live with it’
4.8 Strategies do not help
4.9 Seek help from HCP
4.10 Own strategies

Understanding of low back pain
5.1 Structural based understanding
5.2 Lack of understanding/seeking answers
5.3 Guided by pain
5.4 Description of back pain
2.2 Pain worsened over time

Impact of back pain on daily life
6.1 Restricted
6.2 Modify activities
6.3 Stop activities
6.4 LBP not impacting/restricting
6.5 Pain is always there
2.1 Recurrent LBP

Feelings
7.1 Worry regarding LBP
7.2 Struggle
7.3 ‘Not again’
7.4 Low mood
7.5 Avoiding activity
7.6 Frustrated
7.7 Angry
7.8 Wishing pain would go
7.9 Pain is distressing

Managing not a long term goal
8.1 Short term managing
10.1 What’s next
10.3 Wanting a quick fix

Figure 5.2: Thematic framework for the semi structured interviews

5.4 Findings

The effect of LBP on people's daily lives showed variation among those interviewed. For some people LBP dominated their daily lives and impacted all aspects of this. Controlling the impact of this was challenging and there was frequently a lack of understanding of the cause or prognosis of LBP. In contrast others were able to control the impact of their LBP, however with variation in views regarding the overall impact on their lives. A concern among all participants in varying degrees was a concern for the future regarding worsening of LBP, however people's perceived ability to control the impact of this showed variation.

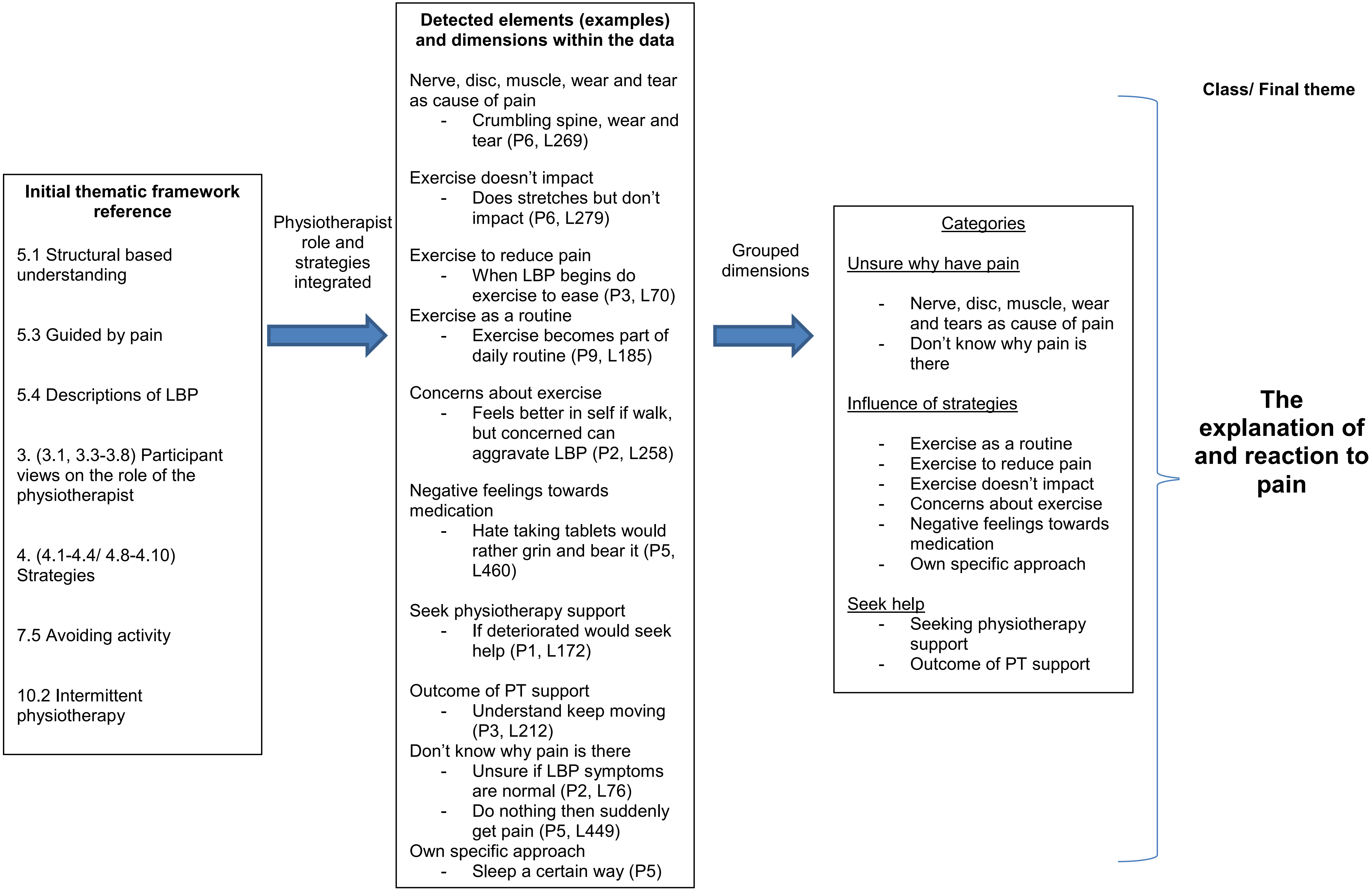
Four interlinked themes were developed from the interviews. People living with LBP responded to pain in different ways. This ranged from adapting their daily life and activities, to carrying out strategies or completely avoiding activity. A structural, anatomical focus dominated participants understanding of the reasoning for their LBP. This reaction to pain linked with the impact LBP had on daily life and distress associated with LBP. Often, those finding LBP to have a negative and restrictive impact of their lives were often searching for what was next and how to resolve their symptoms through treatments.

5.4.1 Explanations of and Reactions to Pain

Often participants provided an anatomical explanation for their pain gathering this information from scans, healthcare professionals or their own views. Participants who demonstrated not fully understanding why they had, or were experiencing LBP reported being more restricted in their daily lives and LBP often dictating what they would allow themselves to do. Avoidance or withdrawing from activities was common among this group, and the view that things were not going to improve, sometimes attributed to what they felt about their LBP and its cause. At times descriptions of pain were quite graphic, describing what was happening with their back with some alarming terms. Figure 5.3 illustrates the development of this theme.

> *P2: I know that they said all my muscles were very very tense, but I don't know… they did think that something was going on in the lower 5th the lower lumbar*
>
> *P2: I get up in the morning, such as this morning…it was just niggling on all the time, I mean its niggling there now I've taken a couple of lots of pain killers today but it just doesn't seem to, it maybe takes the edge off but it never seems to get rid of it and its just a case of, it gets to a point where it wears you down you know, maybe when I go back from talking to yourself I'll maybe just go and have a lie on the sofa for half an hour but then if I do that too much that tends to aggravate it as well. I mean I don't know if I'm talking nonsense here or if its typical*
>
> *P6: It started with a sciatica nerve…I had one of those x-rays…They said it was, wear and tear, curvature. I had another x-ray a few years ago and it said was severe arthritis of the spine. When I seen the x-ray there's two vertebras, something missing in between*
>
> *P6: Obviously there's something nipping nerves in your spine it nips them all over you…Its crumbling, wear and tear*
>
> *P4: I got an MRI scan…it says that I went for a scan, ah I cant understand a lot of this, the lumbar spine scan shows disc degeneration at three levels, presuming the last disc is S1, I don't know what all this means they thought it was spondylitis*
>
> *P4: I said I don't know what had happened, my wife kept saying I bet you've got a slipped disc. You never know do you.*
>
> *P8: I cant fathom out whether it's a certain way I lie, or move or whether the weather affects it*

Individuals who appeared confident in their views on why they were experiencing LBP and felt able to carry out something to address this specific belief, for example exercise to help with the specific problem, demonstrated less restriction and dominance of LBP in their daily life. These views however were very structurally focused, not considering wider reasons for persisting pain. This group of participants showed pacing their activities or reducing these, but not completely stopping activities, although at times this was not the ideal situation for participants.



Initial thematic framework reference

5.1 Structural based understanding

5.3 Guided by pain

5.4 Descriptions of LBP

3. (3.1, 3.3-3.8) Participant views on the role of the physiotherapist

4. (4.1-4.4/ 4.8-4.10) Strategies

7.5 Avoiding activity

10.2 Intermittent physiotherapy

Physiotherapist role and strategies integrated

Detected elements (examples) and dimensions within the data

Nerve, disc, muscle, wear and tear as cause of pain
- Crumbling spine, wear and tear (P6, L269)

Exercise doesn't impact
- Does stretches but don't impact (P6, L279)

Exercise to reduce pain
- When LBP begins do exercise to ease (P3, L70)

Exercise as a routine
- Exercise becomes part of daily routine (P9, L185)

Concerns about exercise
- Feels better in self if walk, but concerned can aggravate LBP (P2, L258)

Negative feelings towards medication
- Hate taking tablets would rather grin and bear it (P5, L460)

Seek physiotherapy support
- If deteriorated would seek help (P1, L172)

Outcome of PT support
- Understand keep moving (P3, L212)

Don't know why pain is there
- Unsure if LBP symptoms are normal (P2, L76)
- Do nothing then suddenly get pain (P5, L449)

Own specific approach
- Sleep a certain way (P5)

Grouped dimensions

Categories

Unsure why have pain
- Nerve, disc, muscle, wear and tears as cause of pain
- Don't know why pain is there

Influence of strategies
- Exercise as a routine
- Exercise to reduce pain
- Exercise doesn't impact
- Concerns about exercise
- Negative feelings towards medication
- Own specific approach

Seek help
- Seeking physiotherapy support
- Outcome of PT support

Class/ Final theme

The explanation of and reaction to pain

Figure 5.3: Development of 'The explanation of and reaction to pain' theme

> *P3: Yeah, well I had actually had a scan so it was two lower discs that were prolapsed, so it was a case of trying to get them back in again*

> *P10: Well you know I tend to believe my doctor that a lot of its to do with wear and tear and I just manage it as it comes along, so that's about all I can say really, you know if its severe enough to take paracetamol I will do and then ill start on my exercises*

One participant had different action plans for different types of pain and attributed a bad time with pain and suffering with nerve pain. Their day to daily lives the felt in control of muscle pain and being able to address this.

> *P7: I think I get pain not necessarily where I've damaged myself but in the muscles*

> *P7: The pain I get down here (points to lower back) from the disc is different from the muscle pain that I get and its different from the pain I get when it traps a nerve*

> *P7: If it gets really bad, the muscle problems, I do some of the exercises they've shown me*
> *P7: The one going back because I have a slipped disc down there or a herniated disc or whatever you want to call it so you know periodically that comes out, so I do those back presses*

In response to pain increasing, a number of participants reported partaking in or increasing their use of exercise. Exercise may be part of a person's daily routine, however as LBP began to increase some participants would respond to this by increasing the amount of exercise carried out, often feeling this to be of benefit in reducing the impact of LBP.

> *P3: When it does start to twinge or start to get bad, I do walk more or try and do my exercises to ease it before it goes so bad that I cant move.*

> *P9: I got an appointment with a physiotherapist and it did me a lot of good to be honest with you the exercises and that. It didn't what I would call cure it but it alleviated a lot of the pain and if things happen and you get careless then because you think I don't feel too bad and you get careless, but the exercises can get me back on my feet within a day*

> *P10: Depends how severe it was, I suppose what I know now, Id probably try and diagnose it myself I could just do the exercises that I was told to do*

Frequently people found the exercises advised by physiotherapists helpful and reported carrying these out at the time of working with the physiotherapist. Participants clearly felt a benefit at the time and valued this advice; however a lack of understanding of the problem and what this meant for the future often influenced perceived control. In relation to exercise, making this achievable for day to day life was important.

> *P9: They basically showed me different exercises to do really you know they haven't said you must do this that or the other, but how do you call it, advised me as such*

> *P3: Yeah its just experience once I initially had a bad back and was told by the physio not to stop keep walking keep moving that's what I do now if its starting to go bad*

At other times exercise were used, however some people were unable to see the benefits of this. This impacted future views regarding trying to find something that would help with their pain. Some participants had the expectation that exercise should have more of an impact on reducing or resolving their pain and had a lot of unanswered questions on what could be done regarding their LBP. Thus participants reported carrying out the exercises however still felt uncertain with how to manage the impact of pain. People were actively involved in activity, but not able to transfer these benefits into daily life. Mention of a cure was common among these participants and if this were possible.

> *P1: She gave me some exercises to do but I don't think that is the real answer to whatever the problem is, but it helps a little bit*

> *P2: I've been doing some of the light exercises to try and just take the edge of it a little bit you know but even that it, it only a case it just does take the edge off it, for me it doesn't cure it I don't know whether there is a cure or not*

> *P4: He just did different exercises, to be honest with you I don't listen a lot, I just wanted to be better [laughs] but he did, now that piriformus*

> *thing worked on that a lot, and that did work. I'd never heard of it before but, is it on the left?*
>
> *P5: I don't know if its me im looking for the absolute cure but nothing was like…impacting. The stretches and all that were alright*
>
> *P6: I can walk, but as soon as I get up and walk out here it will hurt like hell but I keep going, and sometimes I have to sit down and straighten up a bit. I cant hardly walk at all without it hurting*

Pain relief medication in response to pain was frequently viewed as a last resort when the impact of pain was causing too much suffering. Taking medication was not something the majority of participants advocated. Participants expressed a dislike of taking medication, with some taking pain relief as part of routine, unsure of the benefit of this. Alongside medication people had found particular ways of moving and undertaking day to day tasks which they felt helped minimise the risk of a return of LBP. People were frequently conscious of their activities and the risk associated with aggravating their pain. Some participants set themselves strict instructions to what they can and cannot do. However at times, people expressed that no matter what they have tried, frequently many different options, pain remains and impacts their lives.

> *P2: Maybe its not the right thing to do I try and suffer it rather than rely on the painkillers I try and fight through it*
>
> *P5: I hate taking tablets I just don't do it, for me, it's a big no no, anything like that, I just think you should try and grin and bear it*
>
> *P6: I've tried everything, every single thing… I found some gel, that was good, but I had to put it on all the time so that wasn't right, I tried heat pads… I put one on the other day when I was going with my granddaughters, I was really looking forward to it, I went and sat in the café, I then sat in the car until they had finished.*
>
> *P9: I never lie on my right side, I still haven't done because, I tried it once it compresses my spine in my eyes the wrong way and gives me a lot of pain and I still haven't done it*

Some participants adopt an avoidance strategy of a particular activity that people feel is threatening or may cause an increase in pain. Some activities participants assigned as something to not attempt at all due to the perceived consequence and through their own experience of an increase in pain. Over time LBP became an influence on many activities people living with LBP wanted to carry out.

> *P2: It takes the edge off anything you're doing. As I say you know such as today its not too bad outside, if I wanted to go in the garden I wouldn't dare because its niggling me now I'm going to aggravate it*

> *P9: I tend to avoid things that I know are going to give me grief when you get something you know what is going to cause you problems and you tend to avoid it*

In response to an increase in pain and when people felt unable to control the impact of this, participants valued the support of healthcare professionals. Physiotherapists were frequently referred to as someone people would go to, to seek help and support, however it must be considered that this area was specifically explored during interviews. Participants expectations of what support would achieve varied. Seeking support from a physiotherapist could provide reassurance and allow participants to begin to in their view manage the impact of their pain before it increased. In contrast some participants felt disheartened following physiotherapy. In some cases seeking help was due to people feeling uncertain of what else they could do and striving for resolution of symptoms through physiotherapy. At times people expected 'hands on' physiotherapy and others at times found this to be a helpful adjunct to their own strategies with regards to reducing pain. At times this treatment was not viewed as aiming to cure symptoms but to facilitate people to feel in control of their pain once again.

> *P2: I was putting myself in their hands thinking that they know best, I'm going to get rid of this and I must say I was disappointed that it didn't really help me*

> *P2: They gave me acupuncture, the first one I thought yes maybe it did alleviate it a little bit and then the second one, I maybe had three to be honest, they left them a little bit longer and I found that, that aggravated it*

> *P3: Physio helps, it helps that somebody understands you have got a bad back for one because a lot of people think youre putting it on, physio, and the manipulation in the bottom of my back helps a lot and the advice that you get and the different exercises that the physio actually tells you to do, they definitely help*

> *P4: I wanted to get these injections you see at the time, he* [consultant] *said no wait, so I waited and I done all my exercises and I wasn't too bad for a bit… the doctor sent me back again to* [physiotherapist] *they were quite good... said we'll do a lot more exercises and they called it the piriformus muscle, and they worked on that… you know something I felt grand… so they signed me off…then I had a really bad attack*

> *P7: The last time I came for physio that's when I couldn't cope with it anymore, it has just got to that stage, I think, quite a few of the muscles had gone into spasm and I wasn't able to give myself any relief by doing the exercises or anything like that so I just needed that bit of extra help, to just, you know, they can just get their finger right in the knot can't they… it was just enough just to release those spasms, but I had to do the exercises as well. It wasn't like it was just the physio who was going to do it for me*

5.4.2 Managing in the Future

In relation to the future, this could be uncertain and worrisome for some people living with LBP. Figure 5.4 details the development of this theme. Trying to control the impact of LBP at times was seen as temporary and looking for how pain could be changed in the future. Among some participants the feeling that something needed to be done and that they had not yet found the appropriate means of having their LBP resolved. These participants were on a journey to find this help for the future.

> *P2: Tolerate is a better word (laughs) yeah but I suppose in a way yes I am managing it but as to how long do I manage it for before I try and get anything done about it*

> *P4: They do what they have to do, you know they talk to you and they try this and they try that and I tried it for a long time and then the doctor sent us to a physiotherapist and it's the first time somebody's really put us right, they did all these bits on me and that and I felt grand after it… then slowly the pain started, not as bad as it previously had been so then I got in touch, I went for more physio*

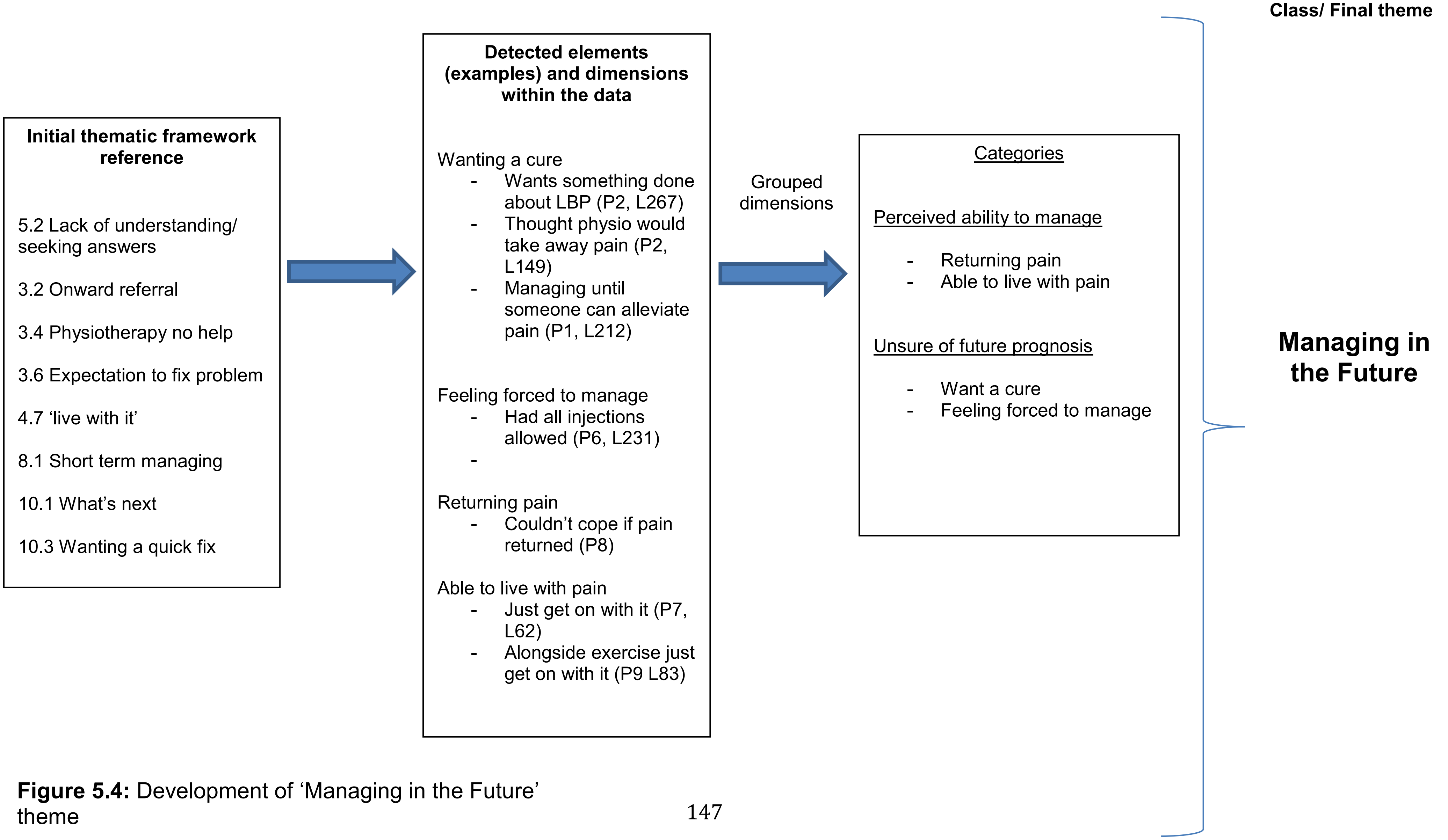
The majority of participants expressed some concern for the future, regardless of their ability to manage the impact of LBP on their daily lives. Often this was related to worsening of symptoms and being unsure what the future held. Relating the cause of symptoms to specific damage opened up these unanswered questions of the future trajectory of their LBP.

> *P2: I think its worse, I think its definitely getting worse, whether that's age related I don't know, I mean when I worked I was sat at an office… I cant honestly say what triggered that off it just kind of happened so whether its one of these things that got worse with age, I really don't know*

> *P5: I don't know if there's lasting damage happening or anything like that, I'm frightened I hate hospitals… I don't want any sort of surgery to correct it, that's what I'm frightened of, really frightened of*

> *P6: I've always been independent I like to do my own thing. Years and years ago after I'd had, one of the older doctors…he said don't you be going for long walks you'll end up in a wheelchair and I thought no not me never…but I can see it coming, if I want to go anywhere, I can see it coming*

> *P7: I just hope it doesn't get worse*



Initial thematic framework reference

5.2 Lack of understanding/ seeking answers

3.2 Onward referral

3.4 Physiotherapy no help

3.6 Expectation to fix problem

4.7 ‘live with it’

8.1 Short term managing

10.1 What’s next

10.3 Wanting a quick fix

Detected elements (examples) and dimensions within the data

Wanting a cure
- Wants something done about LBP (P2, L267)
- Thought physio would take away pain (P2, L149)
- Managing until someone can alleviate pain (P1, L212)

Feeling forced to manage
- Had all injections allowed (P6, L231)
-

Returning pain
- Couldn’t cope if pain returned (P8)

Able to live with pain
- Just get on with it (P7, L62)
- Alongside exercise just get on with it (P9 L83)

Grouped dimensions

Categories

Perceived ability to manage
- Returning pain
- Able to live with pain

Unsure of future prognosis
- Want a cure
- Feeling forced to manage

Class/ Final theme

Managing in the Future

Figure 5.4: Development of ‘Managing in the Future’ theme

The perceived threat of LBP and feeling unable to manage pain appeared to influence if people were currently able to or felt in the future they would be able control the impact of LBP on their lives. Each of the participants reported carrying out exercise, and at times finding success with this, however for some participants this did not provide reassurance for the future if LBP were to return. Participants often described carrying out exercise, which were most frequently provided by physiotherapists and at the time of going through these were found to be something people considered trying.

> *P4:* [physiotherapist name] *put me on these exercises and they were brilliant, I felt fit as a fiddle*
> ***JM: What were they?***
> *P4: There was all kinds…I can't remember them all. I'm not doing them at the moment, I'm not doing anything at the moment that way…*
> *P4: I tried to do something to get rid of it and it didn't work I was making it worse actually*
> ***JM: Right, what were you doing?***
> *P4: The exercises, I was doing the exercises.*
>
> *P6: They always used to say walking was good for you and I used to do a lot of walking and a lot of cycling it hasn't done me any good has it.*
>
> *P6: Well, he gave me some exercises to do which I did religiously but this one sort of hurt, no when it's bad I just go and stand straight up at the wall or if the radiator is on…No, I don't do anything, apart from these exercises*
>
> *P8: I was very cautious when I was, I don't know whether any exercise helped when I had the bad do*

Three participants who demonstrated distress associated with living with LBP and concerns about the future also revealed uncertainty for what the future would hold with regards to medical treatment. A proportion of the participants had hope with the medical system for resolving their pain and demonstrated disappointment that to date they had felt this had been unsuccessful. A sense of ambiguity and discontent prevailed when people felt they had exhausted treatment options.

> *P4: When she looked at my scans and things she said there's not much I can do for you*

> *P2: I was bothered was I the exception to the rule that physio wasn't helping but I was told that sometimes it doesn't, so it was just a case of really going through the gentle exercises and stretches…the physiotherapist that I was under decided you know they'd done what they could for me and wrote back to my GP and said what they'd done and it was a case of her deciding what the options were, I was told what the options were i.e. seeing a back specialist an MRI scan, injections or whatever*

> *P6: I just feel that it's just going to get worse, I used to go to the pain management and he said I cant give you any of that… Apparently, I've had all the, it was a cortisone injection, and the last time he said I cant give you anymore, and you can only have so much cortisone I believe… Yes, so I've had my ration of cortisone, I've had my ration of physiotherapy*

Those who were not concerned for the future with regards to their pain and not allowing LBP to impact on their daily lives each felt that if pain were to worsen and their usual methods were not controlling this then they would seek help from a physiotherapist or GP. Physiotherapists were seen as understanding the problem and someone to offer support and reduce some of the pain people were experiencing. This was a very matter of fact view that if control were unable to be achieved then seeking physiotherapy would be the next step.

Some participants felt physiotherapy had not been able to help them and their particular situation, and were often searching for what is next. However, at times when questioned regarding plans for the future, some reported may 'end up' being referred back to a physiotherapist even though they had felt they had not benefited from their input. These participants demonstrated a lack of understanding regarding their pain, what the future would hold and ultimately feeling uncertain. Further, participants had been referred back to their GP for discussions regarding tests and injections, further enhancing ambiguity for the future.

> *P4: Its uncomfortable, its really uncomfortable….At the present moment I could enter a marathon [laughs] the way I feel at the moment but its always up there, every morning you get up, is this going to happen again and all the bits are in there from the scan*

> *P6: I'm hoping this new Chinese physiotherapy acupuncture is going to do some good…This lady* [acupuncture]*, she said, she doesn't treat where the pain is she treats where the pain is coming from, where it's setting off from, I suppose all my nerves are trapped and all my muscles are bunged up*

Whilst each participant referred to living with the pain, there appeared to be a difference with regards to beginning to accept living with some pain and aiming to control the impact of this and feeling forced to live with pain and a feeling that nothing could be done.

> *P4: I can manage it, yeah, but I could do without it, I can't deal with the pain anymore*
>
> *P5: I have to cope with it because there's nothing that can be done about it*
>
> *P9: Things happen, you come to terms with it you get on with it, and that's it end of story there's no point worrying about it or thinking about it*

5.4.3 Feelings of Concern and Despair

A number of participants expressed concern regarding the return of LBP and worries regarding the impact of this. Figure 5.5 details the development of the themes from the thematic framework, the dimensions within the prior theme, 'feelings' which were developed, were found to consistently have a negative association regarding LBP.

There was a concern among participants that pain would return or worsen. A number of participants were currently living with LBP and finding this difficult. Thoughts of recurrence or worsening could be a frequent occurrence and be very distressing for people hoping that they do not have to experience more pain. With certain people there was a feeling that LBP was out of their control, hoping that it doesn't happen again, but feeling vulnerable that this is possible. Feelings of despair at the return of pain are evident among people's accounts of LBP returning and their description of how they felt when pain returns.

> *P2: The pain gets that way you think oh god no how much more of this you know it really is, for one to a better way, it pulls you down, it really does*
>
> *P4: Its always up there, every morning you get up, is this going to happen again*
>
> *P4: I'll be honest with you, I'm frightened to do anything incase I knock it out again, when you're feeling OK you don't want to knock it out again, and it could happen now, I could stand up now and it could happen again*
>
> *P5: It was still like an itch you couldn't scratch it was still…you were always conscious that it was there and it was going to start really hurting again*

If pain were to return or worsen, people were questioning the impact of LBP with regards to lasting damage and if this will continue to worsen. The concern was clear among some participants of the fact that it was inevitable that their LBP was going to become more problematic, and this was sometimes referred to do with age. Some participants had strong beliefs that the only direction their back pain would go would be getting worse.

> *P4: It just gets more painful, I think it gets more painful you'll find out as you get older, you can't stand the pain, you just wish it would go away but I'm as fit as I can be at my age*
>
> *P4: At the present moment I'm not feeling too bad, but I know it's going to go again...I'm getting old I can't stand the pain anymore, years ago it didn't bother me*
>
> *P6: I feel that's just me for the rest of my life and it will probably get worse*

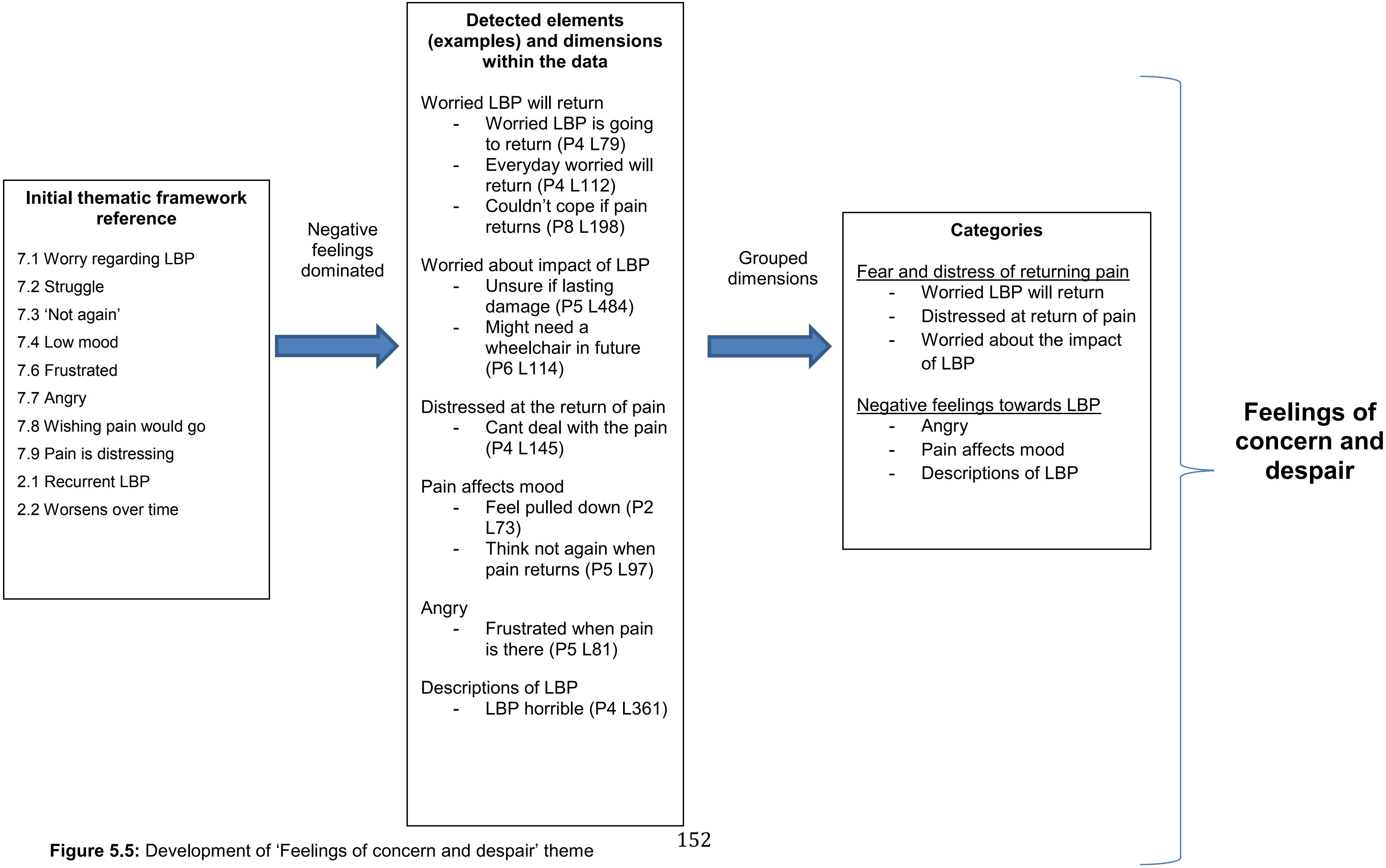


Figure 5.5: Development of 'Feelings of concern and despair' theme

LBP undoubtedly had an effect on the mood of participants ranging from feeling down through to anger and frustration at having back pain plus the limitations that this imposes. The way LBP was described by participants shows the unpleasantness people associate with back pain. Overall, the mix of worry regarding relapse and distressing feelings on the return of LBP shows the anxiety, fear and despair some people with LBP experience.

> *P2: It gets to a point where it wears you down you know*
>
> *P5: It's like having that noise that you can hear outside, that you just cant do anything about, its, you cant completely switch off from it, it keeps going and going and going*
>
> *P5: I've got a temper like I can be quite blunt and short you know, when I'm in agony*
>
> *P6: I get mad with it when I'm wanting to do things, I think my daughter and family seen, I used to like to go out to their house and just potter… now, no more, no more I say I wont come today, no I wont come today*
>
> *P6: I've led a normal decent life and worked all my life, I feel cheated now when I could be doing things, going places.*

Among some participants the difficulty associated with LBP was clear through accounts of how it was living with this day to day. Living with LBP elicited some responses related to suffering and annoyance. However, some participants were of the mind-set of living with the LBP and did not immediately describe the unpleasantness associated with this. These differing mind sets influenced the way in which participants approached LBP. Those responding to living with LBP as 'getting on with it' were those who associated less negative emotions with their LBP.

> ***JM: What is it like living with back pain?***
>
> *P2: Its not very nice, no, its quite difficult…it has been playing me up this past couple of weeks, other than pain killers and trying to remember the exercises they gave me here it just doesn't seem to be (sigh) whats the word, I never seem to be free of it*

> *P6: Awful because I've always been a very active person, I worked all my life…because of my back, I thought oh I'm going to retire. If I hadn't have had a bad back I would still be working now. I've always loved to do my garden, my own decorating, sewing, various things.*
>
> *P7: I mean you just get on with it I think, yeah, you just get on with it*
>
> *P8: Horrendous when it's bad, horrendous*
>
> *P9: Well, it's not ideal. But, you just get on with it, as long as it doesn't get any worse and its manageable then etc. you just get on with it don't you*

5.4.4. The Influence of Low Back Pain: Dictating Daily Life

Alongside the emotional impact of, LBP could cause some people to feel limited and restricted in daily life. People may have difficulty living with pain and social and family life can begin to suffer due to this. In contrast, others modified their lifestyle to still engage in social and leisure activities. Figure 5.6 illustrates development of this theme.

The influence of LBP on day to day life affected some participants involvement in social engagement, including family life and leisure activities which were previously enjoyed. At times LBP was viewed as restricting all aspects of life and people were choosing to refrain from engaging in social or leisure activities due to concerns of being a burden on relatives or for concern of the effect of this on LBP symptoms. Some participants were being controlled by their LBP and this dictated what they would engage in day to day.

> *P2: You're kind of restricting yourself, you know what your limits are and what have you which isn't very nice when you enjoy doing things, I mean I love my garden and I mean I quite like going out for a walk, but even that I can only get so far and I have to stop and especially if you're coming back up hill I tend to find it sort of niggles it*
>
> *P6: I had a ride with my daughter and granddaughters in the car, I only went into three shops, cant do it, and I was really really disappointed. I used to go on holiday, three, four, five times a year, just short holidays, I haven't been for the past three years*

> *P6: I’ve loads of friends, I’m really lucky that way...I would like to think, I’d love to think I could go for the day and look round the shops… I miss doing that this time of year, yeah, but cant do it*
>
> *P5: I’ve got kids and picking up kids is a nightmare, you know, not being able to do things with them*
>
> *P6: I went on one [holiday] and there was this lovely big house, I just sat in the seat outside I knew it would’ve been hard work walking around…so I was a bit disappointed*
>
> *P8: I wouldn’t want to set off out to be going, even maybe in the town shopping if it was bad*

Modifying activities was an approach to managing the impact of LBP. This could be through pacing activities or still carrying hobbies or leisure activities people enjoyed but at a reduced scale. However, when daily tasks or activities needed to be carried out some people discussed carrying them out regardless of the impact and would have an increase in pain following this. Some individuals highlighted it was not an option for daily life to be dictated to by LBP.

> *P1: Just try to not let it stop me doing anything and I’ll keep going as long as I can and I’ll think no, that’s it. If I stand for too long and then I go to sit down … I try not to let it interfere with my life*
>
> *P9: I like to try and walk 2-3 miles a day but even then that gives me a bit of back pain, it's a trade off, its become I cant do what I want to do, and things are a trade off, I enjoy walking it's the only physical exercise I do.*
>
> *P10: If you want to go and dig the garden or something like that you would know about it, it would make it hard work, you probably do it, do little bits at a time*
>
> *P7: I’m a fairly determined person, I’m fairly independent, I will do things that I know are going to make it worse, but I’ll do them anyway*

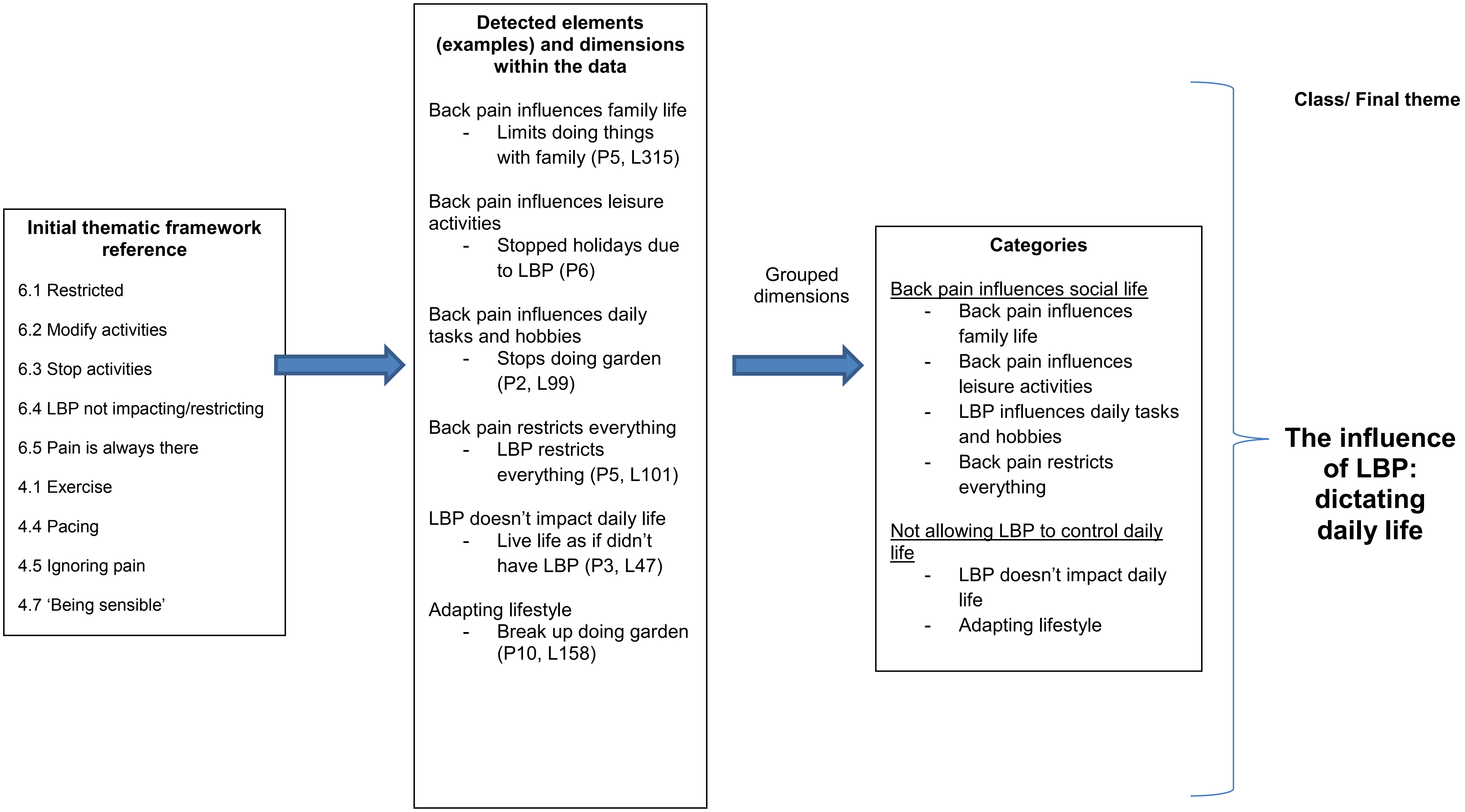
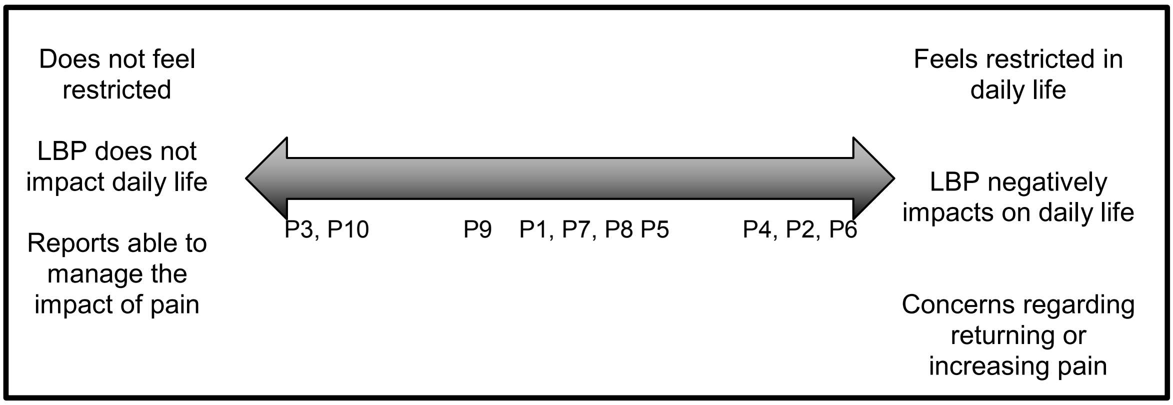


Figure 5.6: Development of 'Low back pain dictating daily life' theme

Some participants shared similar viewpoints relating to the impact of LBP emotionally, on their daily life and how they responded to pain. Those who did not feel restricted often had some confidence in controlling the impact of pain and reported this to not interfering with their day-to-day lives. In contrast, those people who felt very restricted by LBP, had stopped activities they enjoyed and become fearful and concerned for the future demonstrated limited control and LBP was then controlling their lives rather than those being in control of LBP. This is illustrated in figure 5.7. Whilst some participants struggled with all aspects of their daily lives with LBP, others would not let this impact. There were some participants, demonstrated in the centre of figure 5.7 that were engaging in day to day life through work and activities and trying to control the impact of LBP, but at times demonstrated difficulties living with LBP. Although they were engaging in activities such as exercise the wider influence of LBP was having a distressing impact on their lives.

Previous studies have reported time and experience contributing to self-management (Liddle, Baxter & Gracey, 2007; May, 2007) in contrast the present study does not reflect the same view. A proportion of participants who had been living with LBP a number of years were finding it a challenge to control the impact of this on their daily lives and had increased concerns of worsening LBP.

Figure 5.7: The Impact of LBP on Daily Life



5.5 Discussion

The extent of the influence of LBP on people's lives varied among individuals. However, frequently the impact of LBP was wide reaching and influenced people physically, psychologically and socially. This has been highlighted within extant qualitative studies within the literature (Froud *et al.* 2014; Bunzli *et al.* 2013; Snelgrove & Liossi, 2013). The finding of LBP influencing all aspects of daily life is not new; there is a wealth of literature emphasising people's day-to-day distress and challenges. Self-management is defined as to involve managing the biopsychosocial impact of a condition (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009). The current study highlights some problems with people being able to self-manage.

It was evident that frequently people living with LBP felt restricted in their daily life, sometimes socially isolated, experienced a distressing emotional impact, and had great concerns of pain becoming worse. In a previous study by Liddle, Baxter & Gracey (2007) fear, concern and impact on daily life were associated recent onset LBP. However people who had lived with LBP for a number of years were expressing these concerns within the current study, and finding difficulty managing the impact of LBP.

A qualitative study exploring people's daily life with LBP (n=6), in particular focusing on hope and despair powerfully depicts the negative influence of LBP on daily life, through lack of understanding of the cause and the future caused great worry with regards to the impact or return of LBP (Corbett, Foster & Ong, 2007). Participants within Corbett, Foster & Ong (2007) were between nineteen and fifty nine years old. The current study included some participants over fifty-nine years of age, with concerns of worsening being prominent with this age group. Further, the qualitative synthesis by MacNeela *et al.* (2013) and Bunzli *et al.* (2013) focus on individuals being fearful with regards to the future and their LBP. A study by Benjamission *et al.* (2007) included within chapter 3 qualitative synthesis considers the impact of feeling not in control influencing the ability to deal with future recurrence of LBP. The concern for the future highlighted within the current study and the literature demonstrate an issue with regards to self-management, as control is often associated with this (Miles *et* al 2011; Benjamission *et al.* 2007). In the current study, perceived control for LBP in the future does not seem apparent. Whilst understanding of pain may be necessary to help address current beliefs (Bunzli *et al*. 2013) this may also be a mechanism to support managing in the future, as concerns regarding worsening can begin to be addressed.

Extant literature focusing on self-management referred to people being actively involved with self-management strategies through partaking in exercise (Crowe *et al.* 2010a; Cooper, Smith & Hancock, 2009; May, 2007; Liddle, Baxter & Gracey, 2007). However, within the current study individuals were frequently partaking in exercise, and although at times this were beneficial, at other times this did not influence the day to day impact of the condition. It has been proposed studies having a rehabilitation focus were associated with a more positive outlook of people managing their condition (MacNeela *et al.* 2013). However the current study has considered people's wider context when considering active strategies. Reactions to LBP varied among individuals with some using strategies that had past proven experience while others reacted with concern and helplessness. Exercise was reported as provided by physiotherapists, which is a frequent finding (Cooper, Smith & Hancock, 2009; May, 2007). This study highlights that participants may be engaging in strategies such as exercise however the impact of LBP on their day to day live and social life is significant. People may be carrying out exercise but are fearful of recurrence and not being able to cope with this. As defined by Stewart *et al.* (2014) symptom control should influence physical, psychological and social aspects of living with a condition, thus a wider focus of the influence of means of responding to symptoms needs to be considered.

The findings share some similarities with Slade *et al.* (2014). Slade *et al.* (2014) carried out a qualitative synthesis exploring patient beliefs and perceptions about exercise for chronic LBP. Outcomes of exercise were control and pain reduction, which were perceived as important outcomes of exercise by participants. The current study highlighted, in line with Cooper, Smith & Hancock (2009) and May (2007) that some participants immediate response to increasing symptoms is to carry out exercise and the feeling they were able to control this. Similarly to this study, Slade *et al.* (2014) found barriers to exercise being a fear of pain with exercise and diagnostic uncertainty from people living with LBP, which they advocate must be considered in practice. Concurring with Slade *et al.* (2014) recommendations, health care professionals need to be aware of people's views and experiences regarding recommended strategies.

The study highlighted some of the participants' understanding of the cause of their LBP with sometimes anatomical, graphic ways of describing this. The influence of language has been explored by Barker, Reid and Lowe (2009). This study carried out focus groups with healthcare professionals and participants with LBP. The study used a list of terms used in association with back pain to gain participants and healthcare professional understanding of these. The term 'wear and tear' was frequently recognised by Barker, Ried and Lowe (2009) participants. This term was highlighted as often being associated with worsening of the problem, aging and the feeling nothing can be done. In the case of the current study, this may link with future concerns. Beliefs of worsening pain have been shown to be associated with poorer outcome (Campbell *et al.* 2013). Healthcare professionals need to be aware of the impact of terms they use with regards to explaining LBP as this may influence participants understanding of the problem and ultimately management (O'Sullivan & Lin, 2014). A study by Slade, Molloy and Keating (2012) explored twenty three physiotherapists experiences through focus groups of working with people living with LBP. Wanting a diagnosis and the physiotherapists trying to provide this through giving an explanation such as weakness or instability was highlighted (Slade, Molloy & Keating, 2012). Further, the physiotherapists understood the negative meanings associated with things like a disc problem so avoided this, but at the same time felt some diagnosis was needed (Slade, Molloy & Keating, 2012).

There were some participants who referred to a ‘disc’ or ‘muscle spasm’ being the cause of pain and doing exercises to address these problems. Thus, the person having some explanation regarding their problem has allowed them to take some control over this and aim to address this. MacKichan *et al.* (2013) felt an understanding reduced ambiguity relating to the cause of LBP and instilled confidence in being able to carry out some self-care activities. However this focus on the anatomical ‘problem’ and having few specific strategies in response to this can be limiting management (Snelgrove & Liossi, 2013; Moseley, Nicholas & Hodges, 2004). It is clear people’s beliefs regarding their pain and what this means is influencing their ability to self-manage.

In other literature relating to long term conditions, self-management support has been advocated in response to an increase in symptoms that healthcare professionals are advised to consider the dynamic process of a health condition (Dwarswaard *et al.* 2015). As can be seen from the findings from this study and as found in chapter 3 qualitative synthesis people valued the option to seek support if it were required when symptoms increased. Each participant within the current study reported they would return to see a physiotherapist. At times this were for collaboration or at others when they did not know what else to do. However this highlights the central role of the physiotherapist and their potential. Physiotherapists position with regards to supporting people with LBP means they can begin to understand people’s health beliefs and begin addressing these (Sanders *et al.* 2013).

Through exploration of current literature and these current study findings, the concern for the future of returning pain and the biopsyshosocial impact of pain must be considered. Whilst active involvement is important and is a component of self-management, the person’s willingness and ability must be considered (Stewart *et al.* 2014; MacKichan *et al.* 2013). People must be willing to self-manage (Stewart *et al.* 2014) and this study is in agreement with other qualitative studies (discussed in chapter 3) that suggest people searching for a cure are not engaged with self-management.

The current study has considered self-management in the context of people's day to day life and if they are able to manage the biopsychosoical impact of this. If self-management truly is managing the physical, psychological and social aspects of a health condition, then what is demonstrated within the current study is people experiencing LBP having a great impact on their social life, worries regarding worsening or returning pain and often avoiding activity that poses a risk for an increase in pain. Thus, as per definition, some individuals do not appear to be self-managing. Whilst exercise may be a facet of their management, their wider context must be considered. Seeking support from a physiotherapist featured strongly throughout the interviews. Thus, their prominent role in supporting management of LBP is highlighted. People may be searching for a cure or uncertain what is next, however the physiotherapist is in a position to influence this. The subsequent phase of this study is a feasibility study of an education programme for physiotherapists. This education programme aims to support physiotherapists to appreciate the integrated nature of pain and influence on daily life to support people living with LBP to ultimately self-manage.

Chapter 6

6. A Mixed Methods Feasibility Study Exploring the Feasibility of a Pain Education Programme for Physiotherapists in Clinical Practice

6.1 Background

Self-management for LBP is frequently advocated (Balague *et al.* 2012; National Institute for Clinical Excellence, 2009; Bekkering *et al.* 2003) and physiotherapists are encouraged to support this (Cooper, Smith & Hancock, 2009). The study of peoples' experiences of self-management of LBP (chapter 5) illuminated the important role of the physiotherapist regarding intermittent support, in particular when individuals have an increase in pain symptoms. Key within this thesis has been the biopsychosocial model and its relevance to both LBP and self-management; to fully understand an individual's pain the integration of biological, psychological and social factors must be considered (Gatchel *et al.* 2007). Self-management involves managing these multiple influences, emotional and cognitive as well as physical on daily life (Stewart *et al.* 2014; Barlow *et al.* 2002). However, self-management of LBP and its multidimensional nature can present a challenge at times to both people living with this and physiotherapists.

In the qualitative study (chapter 4) conducted exploring physiotherapists' experiences of self-management of LBP, some of the difficulties physiotherapists faced when endeavoring to support people living with LBP were highlighted. The lack of integration of the pain experience prevailed and unease towards psychosocial factors was apparent. Supporting people perceived to have psychosocial influences on their pain experience was viewed as a separate skill. Physiotherapists deemed at times they did not have the skills to support this client group and if they did possess these skills, felt it would take time that physiotherapists believed they did not have.

Healthcare professionals can have biomedical beliefs regarding pain (Nijs *et al.* 2013). Professionals working with people living with pain must consider their own knowledge and beliefs and where development in understanding needs to occur (Briggs & Henderson, 2014). Physiotherapists concerns regarding managing people living with LBP and splitting of the biological and psychological aspects of the pain experience demonstrate the need for educational support in this area. Further, as self-management involves managing the impact of a pain experience, physiotherapists must understand and feel confident with the integrated nature of pain. The requirement for education for clinicians regarding the biopsychosocial nature of LBP and to support this approach is echoed within the literature (Snelgrove and Liossi, 2013; Daykin & Richardson, 2004). As highlighted within the qualitative synthesis (chapter 3) physiotherapists can provide physically focused explanations for pain (Jeffrey & Foster, 2012). Darlow *et al.* (2012) recommend emphasising the neurophysiological aspects of pain to demonstrate the psychological influences on this experience to make the biopsychosocial model relevant for clinicians.

An approach by Moseley (2007) proposed is an adaptation of the neuromatrix theory to facilitate physiotherapists to integrate the various influences on a pain experience and provide a means for understanding pain in the clinical setting. This conceptualisation acknowledges the biopsychosocial pain experience and has relevance to self-management due to consideration of these factors on an individual’s pain experience, and ultimately life. It is recognised the influence of multiple psychological factors on the pain experience and challenges for physiotherapists considering these; thus the proposed conceptualisation offers a model for the integrated nature of pain to be simply depicted and applied in a clinical environment to facilitate physiotherapists to appreciate the interacting dimensions involved in a pain experience and begin to recognise these (Moseley, 2007). Physiotherapists position with regards to supporting people with LBP mean that they can begin to understand their health beliefs and address these (Sanders *et al.* 2013).

Similarly to Moseley (2007), Tracey and Mantyh (2007) review the interacting biological, psychological and contextual factors involved in a pain experience and illustrate this in relation to a clinically relevant model displaying influences on the pain experience. Further, the authors provide a review of how neuroimaging has informed current understanding in pain perception and influences on this with an important factor highlighted being the individuality of a pain experience influenced by contextual and psychological factors.

Within the clinical setting psychological factors may be side lined in favour of focusing on a physical assessment however important information regarding beliefs can be attained through the subjective assessment but often get disregarded (Goldingay, 2006a). As discussed in chapter 1, a partnership is fundamental for self-management. Subjective assessment is important to consider with regards to influences on the pain experience and patients value good communication with healthcare professionals in particular listening with regards to developing a partnership (MacNeela *et al.* 2013; Slade *et al.* 2009; Cooper, Smith & Hancock, 2008).

The qualitative study of people's experiences of living with LBP (chapter 5) provides a wealth of information for physiotherapists to consider within the clinical consultation and supporting people to manage their LBP. People expressed challenges with day-to-day life, a lack of understanding of their problem and at times an inability to control this and fear of future recurrence. Although at times carrying out task-focused strategies was discussed, often the negative impact of LBP remained. Changes in pain frequency or severity may be perceived as continual worsening or further injury if individuals living with LBP do not understand sensitivity changes within the nervous system (Catley, O'Connell & Moseley, 2013). Thus, it is important persons living with LBP have an understanding of the mechanisms of pain as this itself can modulate the pain experience (Catley, O'Connell & Moseley, 2013).

Individuals' experiences of living with LBP have been explored in multiple qualitative synthesis (Bunzli *et al.* 2013; MacNeela *et al.* 2013; Snelgrove & Liossi, 2013). Each of the syntheses found people searching for a diagnosis or physical cause of their problem. Alongside this, highlighted within the qualitative synthesis conducted (chapter 3) those searching for a cure to their LBP were perceived as not being involved with self-management (Cooper, Smith & Hancock, 2009; Benjamisson *et al.* 2007; Liddle, Baxter & Gracey, 2007). Individuals are limited living with pain if they try to manage this within a biomedical model; a biopsychosocial approach is required (Snelgrove & Liossi, 2013). To be actively involved in managing pain, people also need to consider and understand their beliefs (Stewart *et al.* 2014). Biomedical beliefs of people living with LBP prevail and there are difficulties with changing these (Bunzli *et al.* 2013; Snelgrove & Liossi, 2013). Bunzli *et al.* (2013) propose pain physiology education for patients as a means to legitimise pain through 'Explain Pain' (Butler & Moseley, 2003).

Pain neurophysiology education has been identified as a possible avenue to reduce the threat associated with pain and to improve attitudes and beliefs regarding pain (Nijs *et al.* 2013). There have been a number of studies within the literature exploring pain neurophysiology education for people living with pain. A systematic review by Louw *et al*. (2011) focusing on pain neurophysiology education for chronic pain, with the majority of studies population being LBP; found this to influence pain ratings, reduce catastrophization and perceived disability and to enhance physical performance. However, a randomised controlled trial by Moseley, Nicholas & Hodges (2004) note the ability of pain neurophysiology to change pain attitudes and physical activity but this does not transfer into perceived disability. They argue pain neurophysiology education as a basis for development of further management of people living with LBP, to normalise beliefs and to then explore if this transfers into management.

In addition to Louw *et al.* (2011), a systematic review specifically focused on pain neurophysiology education for chronic LBP found physical, psychological and social function were improved following pain neurophysiology education (Clarke, Ryan & Martin, 2011). However the authors recommend caution on these results due to the small number of studies and acknowledge the criteria of studies solely using pain neurophysiology education restricted the search, with only two studies yielded, and pain neurophysiology alone may not reflect clinical practice. However, these studies suggest a means of influencing some of the biopsychosocial influences of a pain experience, in a way to be integrated into clinical practice. Exercise has been shown as frequently advocated for self-management; established within the qualitative synthesis (chapter 3). However, people being uncertain with regards to the cause of their pain or fear associated with this may in turn cause them to not engage with this (Slade *et al.* 2014; Louw *et al.* 2011).

A qualitative study by Toye and Barker (2012) recruited people (n=20) with experience of pain management. Included were those who felt they had benefited from the programme and those who they felt had not. One of the key aspects that people who had benefited portrayed was reducing their fear associated with movement. A fear of damaging themselves prevailed before attending the programme, however through physiotherapist support facilitating understanding of pain through group discussions and gradually trying the feared movements, the fears became reduced or alleviated. In contrast, people searching for answers and a cure had not benefited from the programme, which concurs with the qualitative synthesis by Bunzli *et al.* (2013) that people were often searching for a diagnosis. Alongside this, as found in the qualitative synthesis (chapter 3) those appearing to be finding difficulty ‘self-managing’ were also in search of being cured (Cooper, Smith & Hancock, 2009; Zuffrey & Schulz, 2009; Benjamission *et al.* 2007; Liddle *et al.* 2007).

Self-management interventions of LBP often include an educational component (Carnes *et al.* 2012; Miles *et al.* 2011). Alongside this, self-efficacy has been shown to be an important predictor of self-management and theory used for self-management (Stewart *et al.* 2014; Miles *et al.* 2011). A pilot randomised controlled trial by Ryan *et al.* (2010) found pain physiology education to improve pain self-efficacy, albeit in the short term. Thus demonstrating a potential mechanism to begin to enhance pain self-efficacy. Pain neurophysiology education is a cognitive based intervention, which aims to reduce pain and disability (Ryan *et al.* 2010). Further, pain neurophysiology education results in a change in pain cognitions and provides a foundation for further cognitive behavioural strategies (Moseley, Nicholas & Hodges, 2004). Self-management interventions containing a psychological component, physical activity and education have shown the most promise (Nicholas *et al.* 2013; Carnes *et al.* 2012). Pain neurophysiology education is necessary for people to understand why their pain behaves the way it does and is imperative to start with before building on this with further psychological interventions, however is infrequently mentioned in psychological interventions (McGrath *et al.* 2014). Thus, incorporating pain neurophysiology education into supporting self-management is appropriate to explore due to the potential to influence cognitions, which may influence pain. The aims are two fold, to provide physiotherapists themselves with education and promote integration of the pain experience, and utilisation of pain neurophysiology education in practice.

Whilst there are potential benefits with a patient population, physiotherapists firstly need to reflect and address their own personal attitudes and beliefs regarding pain, with suggestions proposed being through exploring scientific literature regarding pain and participating in evidence based management of pain training (Nijs *et al.* 2013). Darlow *et al.* (2012) conducted a systematic review exploring the association between the attitudes and beliefs of clinicians and the attitudes and beliefs, outcomes and management of patients. Both quantitative and qualitative studies were included in the review (n=17) of which five were set in the UK. A synthesis presented the findings of the research in relation to the aims. The authors note a strength of the review containing a range of designs (11 cross sectional, 1 cohort, 2 longitudinal, 3 qualitative), countries and length of time with LBP which allows for findings to be corroborated. This was the case for attitudes and beliefs of patients being associated with attitudes and beliefs of healthcare professionals, from which strong evidence were found, contributed by a range of studies. Further, healthcare professional fear avoidance beliefs were associated with that of patients and a biomedical orientation had negative associations with patient education, activity recommendations and adherence to guidelines.

Physiotherapists within the qualitative study undertaken (chapter 4) expressed uncertainty with regards to psychosocial influences on a pain experience and a view of a lack of time to address and support these. Within the literature there are models that demonstrate this integration in a useable way in clinical practice. Pain neurophysiology education has the potential to both inform physiotherapists about the multidimensional nature of pain and provide a starting point to address psychosocial influences on an individual pain experience (Moseley, Nicholas & Hodges, 2004; Moseley, 2003).

Moseley (2003b) carried out a three hour seminar regarding pain neurophysiology for healthcare professionals and reported an increase in knowledge, measured using the pain neurophysiology questionnaire. However, further exploration of the impact of this and use in clinical practice is not explored. There are some studies that have investigated physiotherapist education programmes; their focus has been biopsychosocial education with an emphasis on psychosocial factors (Stevenson *et al.* 2006; Overmeer *et al.* 2009) and integrating the biopsychosocial model with function (O'Sullivan *et al.* 2013). Table 14 provides an overview of these studies. Studies focusing on biopsychosocial education have demonstrated improvement in physiotherapist attitudes and beliefs (O'Sullivan *et al.* 2013; Overmeer *et al.* 2009).

Overmeer *et al.* (2009) investigated physiotherapists' attitudes and beliefs (n= 42) following an eight day university course. There was evidence of physiotherapists becoming more biopsychosocially orientated following the education programme. O'Sullivan *et* al. (2013) programme focused on physiotherapists from three countries (n=150) delivering 'cognitive functional therapy' which considers scientific literature regarding pain, live patient presentations and clips alongside management strategies. An education programme for physiotherapists (n=17) delivered within clinical practice in the UK was carried out by Stevenson *et al*. (2006). No significant change

Table 6.1: Extant studies reporting physiotherapist education related to the biopsychosocial nature of pain

Study	Design	Aim	Sample	Course	Outcome measure	Findings
O'Sullivan *et al.* (2013) 'Back pain beliefs among physiotherapists are more positive after biopsychosocially orientated workshops'	Pre post design	Examine if educational biopsychosocial workshops change LBP beliefs of physiotherapists. Alongside this, explore which beliefs were modified, what contributes to the changes and if there is a difference in LBP beliefs between countries.	150 physiotherapists from three countries that attended continuing professional development workshops. England n=70 Ireland n= 42 Germany n=38	3 day workshop focused on LBP (ran in all three countries) 2 day workshop focused on PGP (only ran in England) Both used 'Cognitive Functional Therapy' a biopsychosocial approach to LBP.	• Back Beliefs Questionnaire • Email to a selection of participants (n=12) who had shown positive improvement on the outcome measure for their feedback.	Back Beliefs Questionnaire scores significantly increased after the workshop. (Higher scores demonstrate a more positive belief). Email responses from participants' states that they found scientific evidence of value with the use of live patients and video studies contributing towards their change in beliefs. Participants felt an increased confidence in identifying unhelpful beliefs.
Overmeer *et al.* (2009) 'Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course?'	Pre post design	The effect of an 8 day university education course which focused on identifying and addressing psychosocial prognostic factors during physiotherapy treatment. The programme aimed to shift therapists' knowledge towards a	42 Swedish musculoskeletal physiotherapists.	8 day (64 hours) university education course designed to facilitate identifying and addressing psychosocial prognostic factors.	• PABS-PT • HC-PAIRS • Two questions on knowledge of psychosocial factors • Patient vignettes to assess therapists recommendations • 10 minute video of a fictional patient to assess physiotherapist skills	The attitudes and beliefs of physiotherapists became more biopsychosocially orientated. There were no changes with how patients perceived practice behaviour and were equally satisfied with treatment.

		biopsychosocial approach.			- Questionnaire for patients to measure change in physiotherapist behaviour and patient satisfaction.	
Stevenson *et al.* (2006) 'Does physiotherapy management of low back pain change as a result of an evidence- based educational programme?'	Intervention study	Explore if physiotherapists' management of patients with low back pain changed following an evidence based education package based on biopsychosocial management.	30 musculoskeletal physiotherapists from one trust in the UK. Intervention group received biopsychosocial education. Control group received in service training regarding knee pathologies.	Biopsychosocial education package delivered over five hours. Based on guide to assessing yellow flags manual.	- Discharge summary questionnaire, which included prioritising time, spent on treatments and importance of treatments using a linkert scale.	No significant change in what physiotherapists perceived as important following the educational intervention.

was found in physiotherapist management of people with LBP; unlike O’Sullivan *et al.* (2013) and Overmeer *et al.* (2009) this study did not include measurement of attitudes and beliefs following the intervention.

Overmeer *et al.* (2009) utilise the Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT) and the Healthcare Provider Pain and Impairment Relationship Scale (HC-PAIRS). The PABS-PT aims to determine the treatment orientation of physiotherapists, having either a biomedical structural orientation, linking pain with specific tissue damage or a biopsychosocial orientation considering the influence of psychosocial factors (Ostelo *et al.* 2003). It is the most comprehensively tested measure for healthcare professional attitudes and beliefs (Bishop, 2010). However, further research is required (Mutsaers *et al.* 2012; Bishop *et al.* 2007). The PABS-PT has been used in numerous studies exploring physiotherapists attitudes and beliefs (Hendrick *et al.* 2013; Derghazarian & Simmonds, 2011; Bishop *et al.* 2008). Bishop, Thomas & Foster (2007) carried out a critical review of a number of attitudes and beliefs scales for healthcare professionals. The PABS-PT was reported to have partial information regarding validity and that reliability evidence was found to be limited and further studies required. A later systematic review by Mutsaers *et al.* (2012) investigating the psychometric properties of the PABS-PT found this measure to be responsive to educational interventions thus was appropriate to explore in this feasibility study.

The HC-PAIRS is a 15 item scale with four factors that explores the attitudes and beliefs of healthcare professionals regarding impairment and pain (Rainville, Bagnall and Phalen, 1995). The HC-PAIRS has been used in numerous studies exploring physiotherapists and healthcare professional attitudes and beliefs following education (Domenech *et al.* 2011; Overmeer *et al.* 2009). It has been proposed that items ten and thirteen can be removed from the HC-PAIRS questionnaire and to have a thirteen item one factor questionnaire due to uncertainty regarding if items 10 and 13 regarding cognitions measures the targeted belief (Houben *et al.* 2004). Within the literature it is varied whether studies use 15 item version

(Domenech *et al.* 2011) or the 13 item version (Slater *et al.* 2014). Thus, both were explored in this feasibility study.

In light of the current evidence regarding education programmes for physiotherapists regarding the biopsychosocial nature of pain, the proposed feasibility study differs in a number of ways. O'Sullivan *et al.* (2013) was delivered as an intensive course and Overmeer *et al.* (2009) was a course delivered weekly over eight weeks, requiring a lot of time from the therapist, thus there is scope to integrate this into the clinic over a shorter duration. These studies explore attitudes and beliefs of physiotherapists following training, thus there is scope to explore the applicability of these outcome measures with a course with a shorter delivery in a clinical setting. Although O'Sullivan *et al.* (2013) report aiming for shorter duration due to influence on time, there is no time in between delivery, thus there is scope to deliver shorter sessions over a period of time. Domenech *et al.* (2011) delivered two three hour sessions regarding the biopsychosoical model, yellow flags and application to clinical cases, with a significant improvement in HC-PAIRS scores for physiotherapy students, thus they advocate the benefits of shorter delivery. This therefore warrants exploration with qualified physiotherapists. However there is limited detail given by Domenech *et al.* (2011) regarding the content of the programme, and it is unclear how much with regards to pain neurophysiology is covered.

With respect to in service training although Stevenson *et al.* (2006) report an in service training style session this is specifically regarding yellow flags, they do not consider attitudes and beliefs and it is a one off delivery. Similarly, Moseley (2003b) carried out a pain neurophysiology programme in a single three hour delivery. Whilst Moseley (2003b) and Stevenson *et al.* (2006) were education programmes of shorter duration, neither explored the influence of the education on therapist attitudes and beliefs, nor the implementation or value of the education in clinical practice from the perspective of the participants. Although O'Sullivan *et al.* (2013) gained some feedback from participants; this was via email and provided limited detail. Thus there is scope to gain physiotherapist perspectives regarding education in clinical practice.

A feasibility study is thus proposed that aims to develop and implement an education programme for physiotherapists focusing on pain neurophysiology and patient case studies to aim to develop physiotherapists views of the integrated nature of pain and how they could have an influence on the multiple factors involved in a pain experience. Including application to case studies is an important factor for a number of reasons. In order for education to influence attitudes there must be application of the knowledge gained and skill development through real life situations and time (Ferris, von Gunten & Emanuel, 2001). Further, making education relevant to practice as this is viewed as imperative in healthcare professional education (Holland, 2011). Alongside this, this aspect has been shown to be valuable in an extant education programme (O'Sullivan *et al.* 2013). The programme aims to maximise what physiotherapist can do in the clinic within their role through an understanding of pain neurophysiology and how this can apply to a patient subjective account of their LBP. Thus allowing application of knowledge and making it relevant to their day to day work. Further, exploration of pain neurophysiology education as a means of understanding the integrated nature of pain from a physiotherapist perspective and utilisation of this in clinical practice as a means of supporting self-management of LBP warrants investigation. This is to be achieved through focus groups with physiotherapists following the education programme. Extant studies discussed focusing on clinician education have not gained in depth accounts from participants, with only O'Sullivan *et al.* (2013) presenting a small number of findings from email feedback from participants.

A feasibility study will also help to understand recruitment and retention of participants and highlight any issues with regards to this. In a randomized controlled trial attrition affects the internal validity of the study due to affecting experimental and control groups (Gul & Ali, 2010). Exploring recruitment and retention, as part of the proposed study will allow identification of any problems faced, understanding of these and considering means to address these for future research (Gul & Ali, 2010).

The proposed study will be used to facilitate planning of a main study, it can help to gain an understanding of what aspects of a study may and may not work (Williams & Lecouturier, 2014). The proposed intervention aims to be carried out in clinical practice thus it is important to explore the acceptability of this from the perspectives of the physiotherapists taking part. The intervention may not appeal to participants (Lancaster, Dodd & Williamson, 2007) and as this intervention has not been carried out in clinical practice before it is necessary to consider this as part of the aims of the feasibility study. Studies that do not employ qualitative methods can limit understanding of the acceptability and suitability of an intervention through not gaining perspectives from the partaking group (Dainty *et al.* 2015).

Individuals living with LBP are finding difficulties living with this day to day. Alongside this, physiotherapists are facing challenges to support this management and demonstrating a lack of integration of the pain experience. The proposed study utilised pain neurophysiology education, Moseley (2007) and Tracey & Mantyh (2007) models and patient case studies informed by chapter 5 to identify influences on the pain experience and application of pain neurophysiology education in the clinic to begin to address the biopsychosocial influences on LBP. In relation to self-management, this will allow physiotherapists to consider what may be influencing day to day management. Pain neurophysiology education is advocated for people living with pain, however exploration of physiotherapist views and experiences of using this in the clinical setting and using this to support self-management is yet to be explored. Thus this study has used focus groups to explore the applicability of the programme in clinical practice. It was hypothesised that a short pain education programme for physiotherapists delivered in clinical practice would result in a difference in physiotherapist pain attitudes and beliefs following the programme measured by PABS-PT and HC-PAIRS questionnaires.

6.2 Aims

The aim of this study was to design, implement and assess the feasibility of an education programme for physiotherapists in clinical practice. To achieve this aim the study had the following objectives:

- To develop an educational intervention for physiotherapists
- To assess the acceptability of the intervention and outcome measures
- To assess the feasibility of physiotherapist recruitment and retention
- To assess the feasibility of two outcome measures to select the most appropriate primary outcome measure for a future study to measure attitudes and beliefs of the physiotherapists
- To analyse trends and compare differences between the pre and post intervention scores for PABS-PT and HC-PAIRS outcome measures

6.3 Methods

A mixed method single arm feasibility study involving a single group pre test post test design and focus groups with participants following the intervention was used.

6.3.1 Participants and recruitment

Ten musculoskeletal physiotherapists were recruited from two musculoskeletal outpatient clinics in one NHS trust. To be included in the study the physiotherapists had to be working in musculoskeletal outpatients and have worked with people with LBP in the last six months. Participants received a participant information sheet when invited to participate in the education programme (Appendix 8**).** All participants provided written informed consent before the education programme. A copy of the consent form given is detailed in Appendix 9.

6.3.2 Intervention: Education programme

The education programme involved a 2.5-3 hour session, once a month for three months. Implementing a course over time, rather than a one-time delivery allows for application of skills and discussion at the returning session (Chipchase, Johnston & Long, 2012). The ‘Explain Pain’ paradigm (Butler & Moseley, 2003) focusing on pain neurophysiology education in particular pain mechanisms and the role of the brain in pain guided the philosophy of the focus on pain neurophysiology. A large influence on the programme was an application of a proposed means of presenting and understanding pain science by Moseley (2007). Whilst acknowledging the great complexities of pain, Moseley (2007) advocates making pain biology clinically relevant and seeing pain as an output in response to threat. This clinically relevant application of the neuromatrix theory and a means of presenting the various influences of pain are relevant to the aims of the education programme. Moseley (2007) proposed approach to presenting the pain experience aimed to facilitate physiotherapists to integrate the various influences on a pain experience and provide a means for understanding pain in the clinic and relating this to people living with LBP.

Session one: The first session of the programme included an introduction to pain science. Pain models including Descartes, the Gate Control Theory, Neuromatrix theory and the biopsychosocial model were discussed (Melzack, 1999; Wall, 2000; Gatchel *et al.* 2007; Moseley, 2007). The inclusion of discussion regarding Descartes and splitting of mind and body (Gatchel *et al.* 2007) was felt appropriate due to physiotherapists demonstrating this within the qualitative study (chapter 4) and extant qualitative studies (Jeffrey & Foster, 2012; Daykin & Richardson, 2004). Pain neuro anatomy and physiology, including pain mechanisms and descending control were included (Woolf, 2011; McMahon & Koltzenburg, 2006; Nee & Butler, 2006; Apkarian *et al.* 2005; Butler & Moseley, 2003; Butler 2000). The first session concluded with discussion of the integrated nature of the biological and psychological aspects of pain informed by Flor and Turk (2006) and Tracey and Mantyh (2007).

Session two: Moseley (2007) and Goldingay (2006a, 2006b) informed this session of the programme. Initially red flag assessment was covered, following this a review of key points from session 1 was discussed among the group. Extracts from three patient interviews from chapter 5 of this study lasting between three and five minutes were chosen relating to the person's understanding of their problem, the influence of LBP on daily life, experience of physiotherapy and thoughts and beliefs regarding LBP. The extracts kept the language and essence of what the participants said but sometimes fillers were removed for clarity and in places a summary was provided of participants views on a topic. Physiotherapists listened to the extracts once and used this as part of an activity to discuss what may be influencing that person's pain experience. The physiotherapists were not provided with a copy of these extracts. Persons unrelated to the study provided the voice for these annonymised extracts. No identifiable information, including demographic information regarding the participants from whom the extracts originated was provided.

The purpose was to highlight the influences found in chapter 5 to allow physiotherapists to consider how they could use the subjective information informed by Goldingay (2006a, 2006b) and how this relates to pain biology and pain management informed by Moseley (2007) conceptualisation. To facilitate application of the information provided and discussed participants were encouraged to apply the principles covered in this session to discuss the next session. Goldingay (2006b) integrate listening, building rapport and picking up on cues within the clinical consultation. They recommend extracts of the physiotherapist-patient encounter, however in the case of the education programme extracts from only the person living with LBP were used. Their approach to suggesting the strength of picking up on key information during a usual subjective assessment fitted with the ethos of the education programme to apply skills in a clinical situation. This approach linked with Moseley (2007) and Tracey and Mantyh (2007) reviews regarding the influence of context and past experience on the perception of pain.

Session three: A range of evidence regarding pain neurophysiology education was presented and discussed. A review of the previous sessions was carried out and pain neurophysiology education related to how this could influence a person living with LBP pain experience. The studies examined during this aspect of the programme were Clarke, Ryan and Martin (2011), Louw *et al.* (2011), Moseley (2004) and Moseley (2002). This session focused on application of pain biology education through exploration of studies utilising this and applying this to extracts from session 2.

6.3.3 Outcome measures

The outcome measures were administered to physiotherapists immediately before the education programme and at the end of the education programme.

6.3.3.1 Physiotherapist attitudes and beliefs scale: PABS-PT

The PABS-PT has two factors, factor 1 is biomedical orientation and factor 2 is behavioural/ biopsychosocial orientation, with a high score for factor 1 showing a more biomedical orientation such as pain equalling tissue damage and a higher factor 2 score is viewed to demonstrate a more biopsychosocial treatment orientation (Houben *et al.* 2005). Scores for factor 1 are added together and the same for factor 2 to produce a biomedical and behavioural/biopsychosicial score (Ostelo *et al.* 2003). The Houben *et al.* (2005) 19 item version PABS-PT was utilised for this study. The items in each factor are rated on a 6 point likert scale from totally disagree to totally agree (Mutsaers *et al.* 2012).

6.3.3.2 Healthcare Providers Pain and Impairment Relationship Scale: HC-PAIRS

Rainville, Bagnall & Phalen (1995) HC-PAIRS has a 7 point likert scale with responses ranging from ‘completely disagree’ to ‘completely agree’, with questions 1, 6 and 14 reverse scored. A lower score is associated with less likelihood of associating impairment to pain (Bishop *et al.* 2007). The 15 item HC-PAIRS has 4 factors which are ‘functional expectations’, ‘need for a cure’, social expectations’ and ‘projected cognitions’ (Bishop *et al.* 2007). Analysis of this pre and post outcome measure will explore the 15 item total score, the 4 factor scores and 13 item 1 factor score. One item of the HC-PAIRS uses the term ‘handicapped’. Unfortunately this term is unable to be changed as may affect the validity of the measure; this has been noted when used in other studies (Evans *et al.* 2005).

6.3.4 Data analysis

6.3.4.1 Quantitative Data

The quantitative data from the outcome measures were analysed using the Statistical Package for the Social Science (SPSS) version 22.0 for Windows. Data were analysed using descriptive and inferential statistics. A reduction in score on the PABS-PT factor 1 (biomedical) and HC-PAIRS and an increase in score on PABS-PT factor 2 (behavioural) indicate an improvement in scores. Table 6.2 shows baseline characteristics and pre intervention scores on the outcome measures used.

Table 6.2: Demographics of physiotherapists and pre intervention scores

Gender	8 Females, 2 Males
Length of experience mean (range)	10.6 years (3-19)
PABS-PT Factor 1 median score (range, IQR)	29 (19-34, 22.5-33.5)
PABS-PT Factor 2 median score (range, IQR)	37 (33-41,34.5-39.5)
HC-PAIRS 15 item median score (range, IQR)	47.5 (33-58, 36-52)
HC-PAIRS 13 item median score (range, IQR)	36 (22-, 24-40)

6.3.4.2 Qualitative data

The Framework Method of data anlysis (Spencer *et al.* 2014; Ritchie, Spencer & O'Connor, 2003) was used to analyse the data from the two focus groups post intervention.

6.4 Results

6.4.1 Quantitative data

A total of ten physiotherapists took part in the education programme. There were two male and eight female physiotherapists with a mean of 10.6 years experience. Data from pre and post outcome measures were included if a physiotherapist attended a minimum of two sessions. Two physiotherapists missed one of the three sessions. A HC-PAIRS questionnaire had one question left blank, a 'neutral' score of four (middle of the scale) was used as per Houben *et al.* (2004) who used this procedure with HC-PAIRS when less than 10% of the measure had a missing value. The PABS-PT and HC-PAIRS outcome measures were completed before and after the education programme.

The PABS-PT currently has no guidance of what would be classed as a high or low score and thus no consensus of what score would demonstrate a clinically relevant change (Mutsaers *et al.* 2012; Bishop, 2010). Domenech *et al.* (2011) reports a clinically important change of >4.5 for HC-PAIRS, however do not expand on how this value is supported.

The data collected is ordinal and had a small sample size so normality could not be guaranteed thus a non parametric test was required (Dancey, Reidy & Rowe, 2012). The samples were paired thus Wilcoxon signed ranks test was most appropriate (McKenzie, 2013). Table 6.3 details pre and post median outcome measures for PABS-PT factor 1 and factor 2 and HC PAIRS 15 item and 13 item.

Table 6.3: Median PABS-PT and HC-PAIRS pre and post scores

Outcome measure	Baseline score median (range, IQR)	Post intervention score median (range, IQR)	Change in median score
PABS-PT Factor 1	29 (19-34, 22.5-33.5)	25 (16-32, 19.5-29)	4
PABS-PT Factor 2	37 (33-41, 34.5-39.5)	37.5 (35-42, 35-40.5)	0.5
HC-PAIRS 15 item	47.5 (33-58, 36-52)	45 (35-58, 37-55)	2.5
HC-PAIRS 13 item	36 (24-40)	32 (26-42.5)	4

6.4.1.1 PABS-PT Outcome Measure

There was no statistically significant difference between PABS-PT Factor 1 scores following the education programme ($z = -1.694$, $p = >0.05$). Prior to the course physiotherapists scored a median of 29 (IQR 22.5-33.5) on the biomedical factor of the PABS-PT. At the end of the course they scored a median of 25 (IQR 19.5-29).

Figure 6.1 displays a bar chart for the pre and post factor 1 factor scores. The median score has reduced by 4 points following the educational intervention. Alongside this, a higher proportion of scores concentrated around lower end of the scale. The post intervention outcome measure has nine scores of 30 and below in comparison to the pre outcome measure which had six.

There was no statistically significant difference between PABS-PT Factor 2 scores following the education programme (*z* = -.409, *p* = >0.05). The factor 2 (behavioural) factor median before the course was 37 (IQR 34.5-39.5) and changed to 37.5 (IQR 35-40.5) following the education programme. There is a more equal spread of the middle 50% scores in relation to the median for the post PABS-PT factor 2, with more scores higher than the median in comparison to the pre outcome measure.

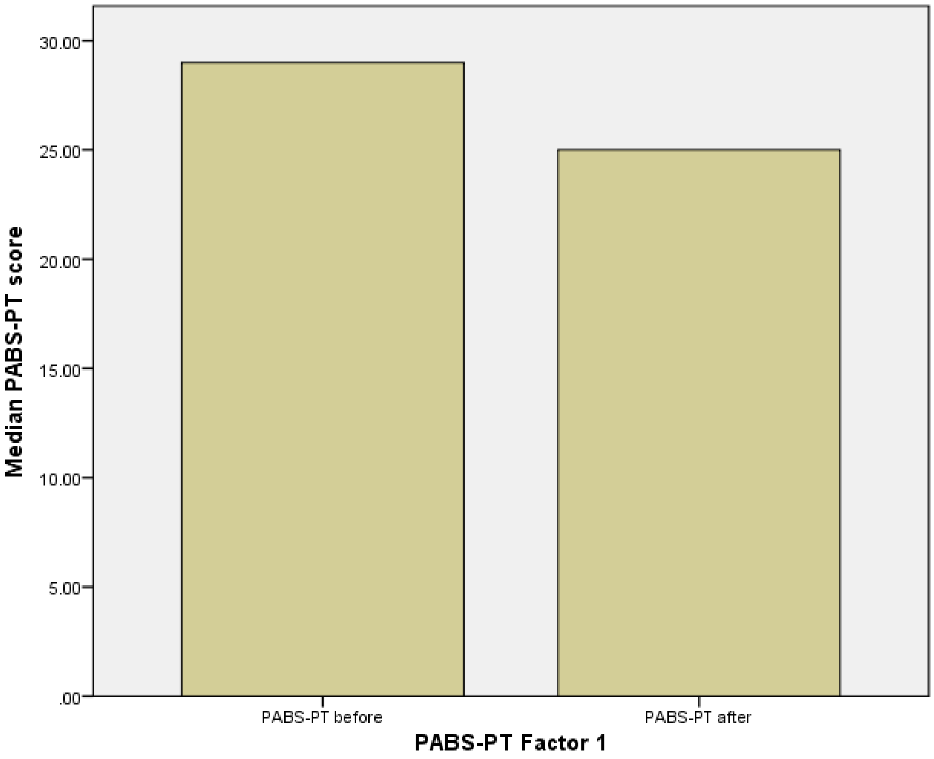


Figure 6.1: PABS-PT Factor 1 (biomedical) scores pre and post intervention

6.4.1.2 HC-PAIRS Outcome Measure

There was no statistically significant difference between HC-PAIRS 15 item score following the education programme (*z* = -.205, *p* = >0.05). The HC-PAIRS 15 item scores demonstrated a change in median score pre and post intervention. Pre intervention was 47.5 (IQR 36-52) and post intervention 45

(IQR 37-55).

There was no statistically significant difference between HC-PAIRS 13 item score following the education programme (*z* = .000, *p* = >0.05). When considered as a 13 item measure the HC-PAIRS pre intervention median score was 36 (IQR 24-40) and post intervention median score was 32 (IQR 26-42.5) which is a median change of 4 points. Figure 6.2 bar chart displays this change.

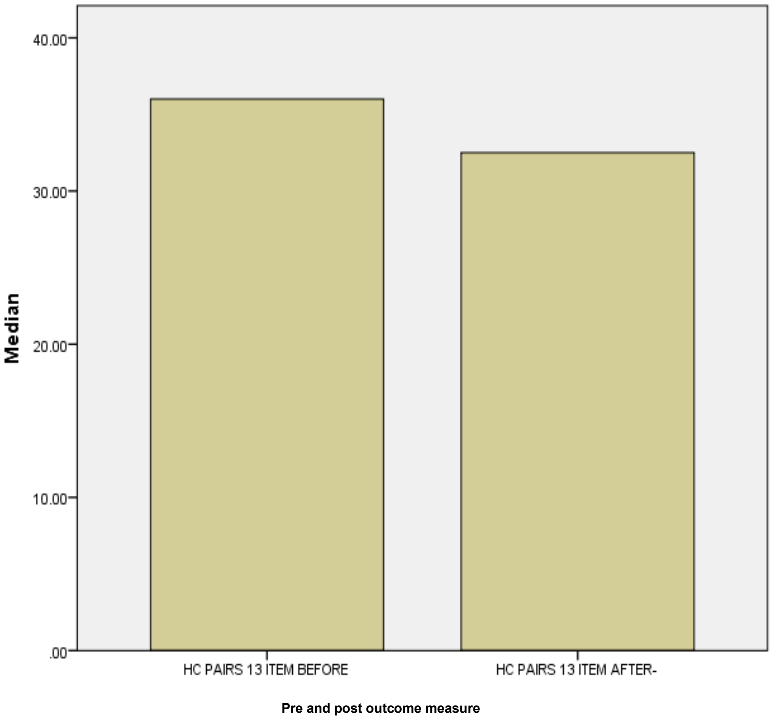


Figure 6.2: Pre and post median scores 13 item HC-PAIRS

No statistically significant differences were found pre and post between any of the four corresponding factors for HC-PAIRS using a Wilcoxon Signed Ranks Test. ‘Need for a cure’ factor (*z* = -1.065 ,*p* = >0.05) median score and ‘cognitive’ factor (*z* = .000, *p* =>0.05) median score were unchanged, being 8 and 12 respectively. The ‘social’ factor (*z* = -1.073, *p* =>0.05) median showed a one point improvement from 10 to 9 and ‘functional expectations’ factor (*z* = .358 ,*p* =>0.05) median showing a 3 point improvement from 25.5 to 22.5. Figure 6.3 illustrates the differences among the 4 factors.

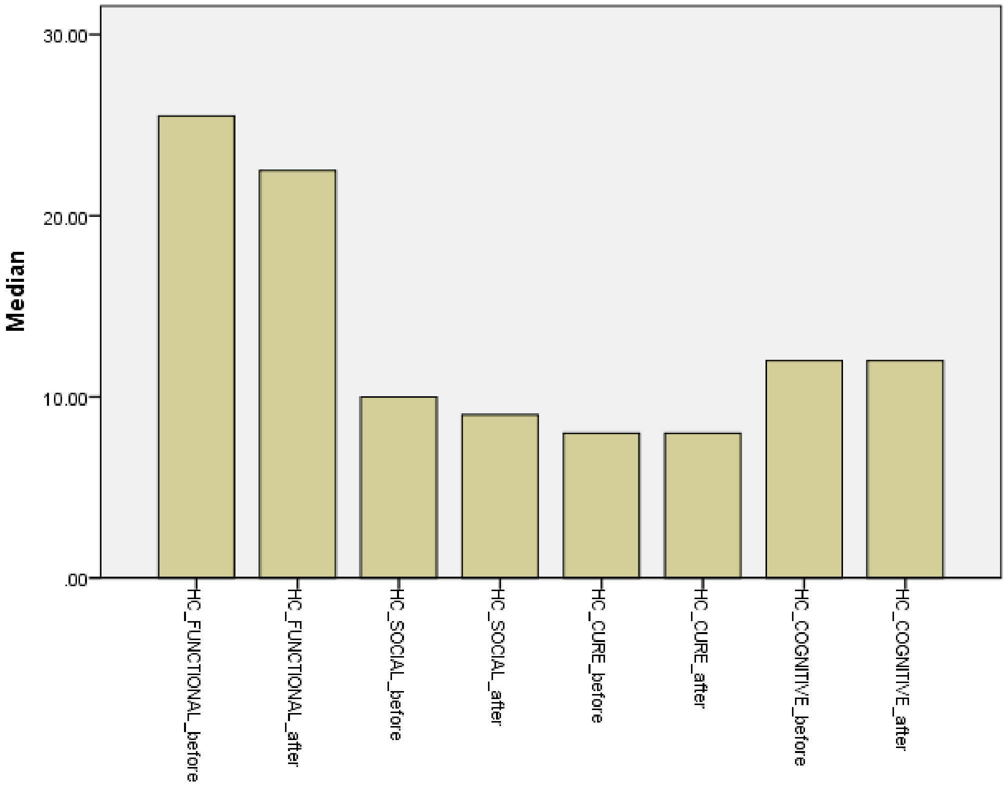
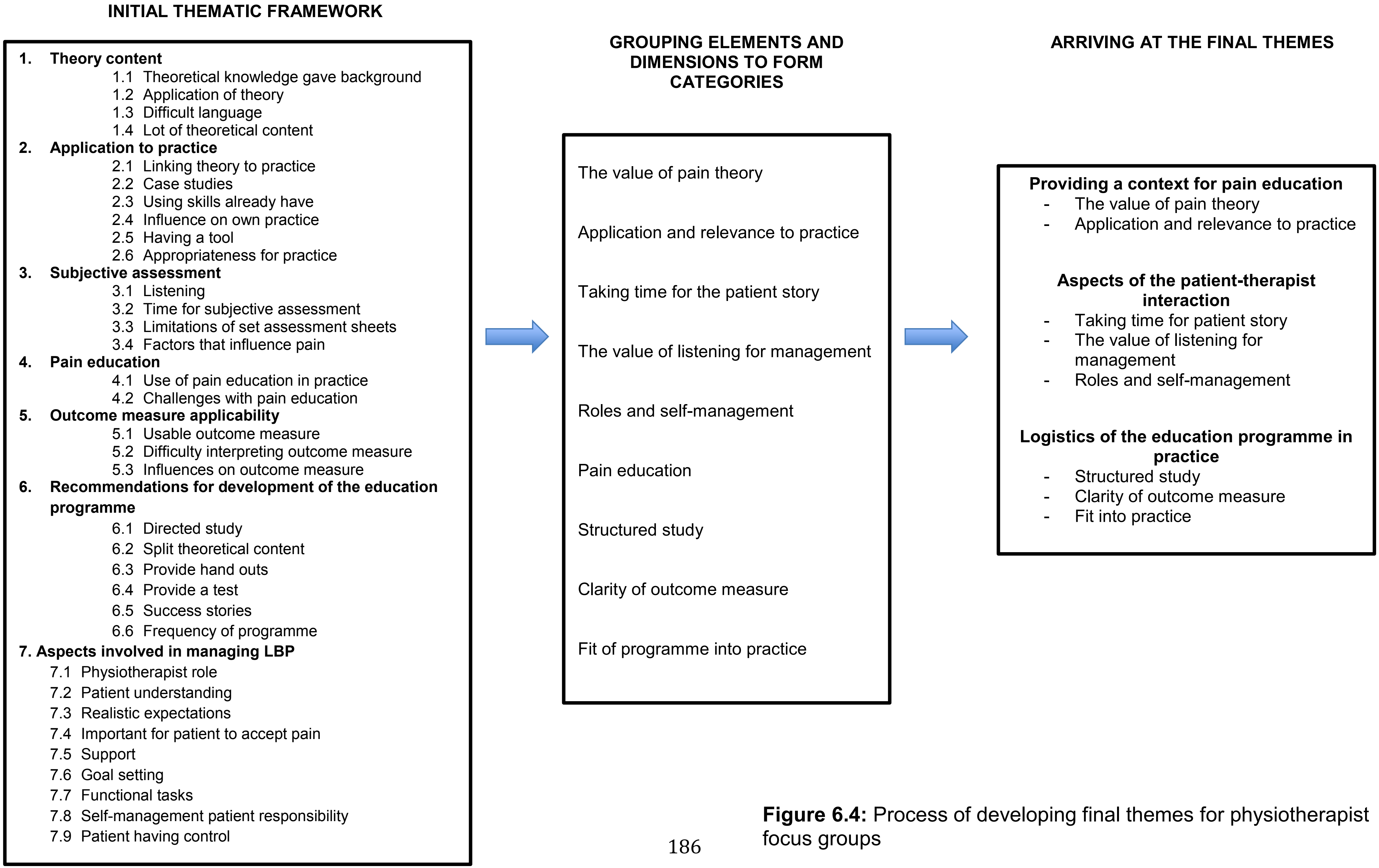


Figure 6.3: Pre and post median scores for 4 factors of HC-PAIRS 15 item

6.4.2 Qualitative data: focus groups findings

Seven of the physiotherapists took part in one of two focus groups following the education programme. Two focus groups with four and three physiotherapists respectively were carried out following the education programme. The analysis yielded three overall interlinked themes. Figure 6.4 illustrates the transition from the initial thematic framework to final themes.



INITIAL THEMATIC FRAMEWORK

1. **Theory content**
    - 1.1 Theoretical knowledge gave background
    - 1.2 Application of theory
    - 1.3 Difficult language
    - 1.4 Lot of theoretical content
2. **Application to practice**
    - 2.1 Linking theory to practice
    - 2.2 Case studies
    - 2.3 Using skills already have
    - 2.4 Influence on own practice
    - 2.5 Having a tool
    - 2.6 Appropriateness for practice
3. **Subjective assessment**
    - 3.1 Listening
    - 3.2 Time for subjective assessment
    - 3.3 Limitations of set assessment sheets
    - 3.4 Factors that influence pain
4. **Pain education**
    - 4.1 Use of pain education in practice
    - 4.2 Challenges with pain education
5. **Outcome measure applicability**
    - 5.1 Usable outcome measure
    - 5.2 Difficulty interpreting outcome measure
    - 5.3 Influences on outcome measure
6. **Recommendations for development of the education programme**
    - 6.1 Directed study
    - 6.2 Split theoretical content
    - 6.3 Provide hand outs
    - 6.4 Provide a test
    - 6.5 Success stories
    - 6.6 Frequency of programme
7. **Aspects involved in managing LBP**
    - 7.1 Physiotherapist role
    - 7.2 Patient understanding
    - 7.3 Realistic expectations
    - 7.4 Important for patient to accept pain
    - 7.5 Support
    - 7.6 Goal setting
    - 7.7 Functional tasks
    - 7.8 Self-management patient responsibility
    - 7.9 Patient having control

GROUPING ELEMENTS AND DIMENSIONS TO FORM CATEGORIES

The value of pain theory

Application and relevance to practice

Taking time for the patient story

The value of listening for management

Roles and self-management

Pain education

Structured study

Clarity of outcome measure

Fit of programme into practice

ARRIVING AT THE FINAL THEMES

Providing a context for pain education
- The value of pain theory
- Application and relevance to practice

Aspects of the patient-therapist interaction
- Taking time for patient story
- The value of listening for management
- Roles and self-management

Logistics of the education programme in practice
- Structured study
- Clarity of outcome measure
- Fit into practice

Figure 6.4: Process of developing final themes for physiotherapist focus groups

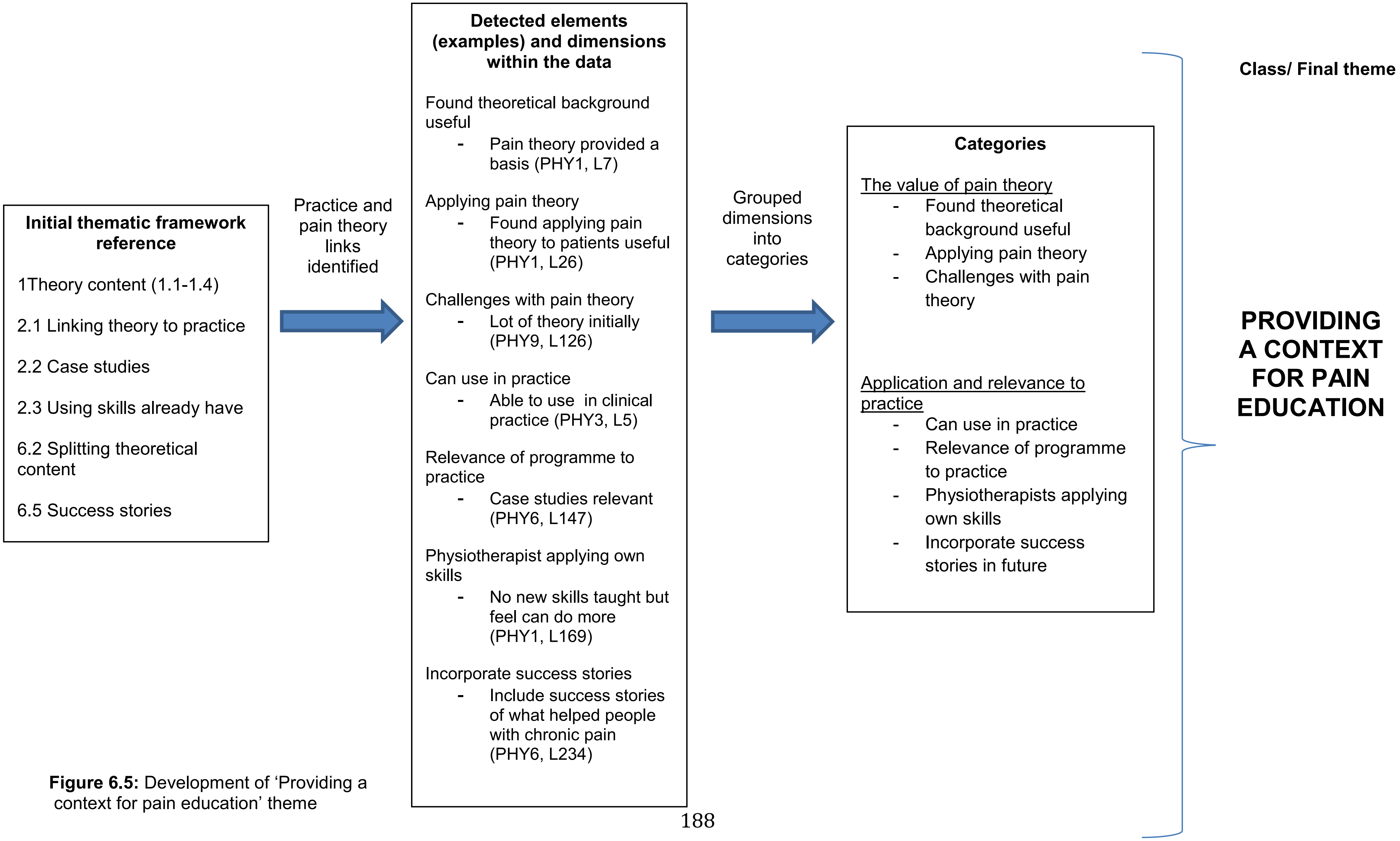
6.4.2.1 Providing a context for pain education

Figure 6.5 illustrates the process of the development of this theme informed by the initial thematic framework. Physiotherapists who had taken part in the education programme valued the theoretical aspect. Physiotherapists found the theory regarding pain physiology useful to include as it provided a foundation for the course and relevant understanding. The physiotherapists may have covered aspects of pain neurophysiology in the past, however appreciated revisiting this area.

> *PHY1: I think the depth of the sort of theoretical knowledge in the first one was good, it gave me a better understanding of how it applies to patients, so a sort of deeper understanding of what is happening in the nervous system of people with persistent pain. That was a good basis.*
>
> *PHY5: I really liked it because I haven't touched on it since I finished uni so I was in need of a refresher certainly, it was really in depth, and aimed at the right level. I think too much deeper and I'd have struggled a bit, to be honest with you. I found it really informative and it was a quite good brush up on everything I'd learned before just bringing it back to the front of my mind.*
>
> *PHY7: It's nice to go over the physiology and anatomy. I know it's quite difficult, it's difficult to read, it's nice to be lectured on it… once you're out in clinical practice you don't get that anymore… so actually all that information is really useful*

This theoretical aspect of the programme allowed physiotherapists to link this to the presentation of pain in people in the clinic. In some cases, this understanding of pain enhanced the credibility of people living with pain. Through understanding the physiology physiotherapists could appreciate why pain persisted. It was of value to be able to see the physiological processes occurring during a pain experience.

> *PHY5: I think having that understanding it sort of changed the way I look at people with chronic pain a little bit differently just having that theoretical underpinning knowledge*
>
> *PHY10: I also thought just kind of having a better understanding, oh yeah right, that is going on, so there's actually something physically chemically happening*
>
> *PHY9: They're not just making it up.*



Initial thematic framework reference

1Theory content (1.1-1.4)

2.1 Linking theory to practice

2.2 Case studies

2.3 Using skills already have

6.2 Splitting theoretical content

6.5 Success stories

Practice and pain theory links identified

Detected elements (examples) and dimensions within the data

Found theoretical background useful
- Pain theory provided a basis (PHY1, L7)

Applying pain theory
- Found applying pain theory to patients useful (PHY1, L26)

Challenges with pain theory
- Lot of theory initially (PHY9, L126)

Can use in practice
- Able to use in clinical practice (PHY3, L5)

Relevance of programme to practice
- Case studies relevant (PHY6, L147)

Physiotherapist applying own skills
- No new skills taught but feel can do more (PHY1, L169)

Incorporate success stories
- Include success stories of what helped people with chronic pain (PHY6, L234)

Grouped dimensions into categories

Categories

The value of pain theory
- Found theoretical background useful
- Applying pain theory
- Challenges with pain theory

Application and relevance to practice
- Can use in practice
- Relevance of programme to practice
- Physiotherapists applying own skills
- Incorporate success stories in future

Class/ Final theme

PROVIDING A CONTEXT FOR PAIN EDUCATION

Figure 6.5: Development of ‘Providing a context for pain education’ theme

> *PHY10: Yeah, that’s why it hurts so much for those people*
>
> *PHY9: It’s beyond their control isn’t it I guess*

Although physiotherapists found the theoretical aspect of the programme valuable, some of the group found the pain physiology language quite difficult to understand. In order to develop their understanding and gain the most from the programme, physiotherapists suggested splitting the theoretical aspect. Although they felt the theory was relevant, a future recommendation was to allow time in between the theoretical aspects for physiotherapists to develop a better understanding and confidence in this area.

> *PHY1: The thing I found hard is that to me, pain physiology is like a different language, I don’t speak that language very well*
>
> *PHY3: I found it quite difficult at times understanding all the physiology*
>
> *PHY10: I would maybe split the first one, so you could spend more time almost working through it*
>
> *PHY9: Yeah, in hindsight the more I think of it there was a lot of information to take on*

Alongside finding the theoretical aspect useful, albeit with some challenges, physiotherapists attributed a lot of value to linking the theoretical aspect to the clinical setting. While physiotherapists found the theoretical aspect of the programme interesting, it was important that they could see how to apply this information and use this in day to day clinical practice. Linking the programme to the physiotherapists’ specific context allowed associations to be made with their clinical practice and consider the relevance and application of this. Contextualising the course through case studies was also felt to be beneficial. However, two physiotherapists felt some success stories or positive case studies would have added to the course, rather than the focus solely being people who were finding day to day with LBP difficult.

> *PHY1: All the theory and the skills and the listening you were talking about at all times is applying to not just physio but to our setting*
> *PHY9: Yeah that's what I found really useful*
>
> *PHY1: Where you can see how to apply it, whereas often, I feel those skills are taught as a different skill and then it's like it doesn't fit in to what we do, so we can't do it, so if you're getting trained part of you is switching off because you know you can't apply it*
>
> *PHY9: It flowed well, you started off with discussing the theory behind you know and you explained all of that, and had you not done that I think we would have been lost and you ended it on a clinical basis in terms of how we apply it…because ultimately we're all physios at the end of the day and we want to see how we can apply it*
>
> *PHY6: Even some success stories, people saying what has helped them and what gained a bit more positive*

In line with providing a context for pain education, physiotherapists appreciated the course was not intended to provide a range of new skills, but to be able to effectively use the skills they already have. The links between understanding of pain and day to day practice allowed physiotherapists to consider how they could support someone with LBP in their clinical practice. Physiotherapists recognised their position as having the potential to positively influence and support someone with LBP. Physiotherapists did not feel dictated to or that they had to use this approach, it was how it fitted with their clinical practice and their reasoning.

> *PHY1: I think the focus on, the bits that physio can use that you could bring to it, I suppose the way you sort of reminded that actually, don't throw your hands up as much or say I don't know how to help this person, but recognise that you're in a position to try, that's in my mind a bit more based on that*
>
> *PHY9: To me it was more your attitude saying I know you're not CBT, but there's maybe a few suggestions you can try, there wasn't any you've got to do it like this or do it like that, it was your awareness of our timing and things*
>
> *PHY1: CBT is like a different skill and what you did was sort of, bridge the gap, find a way of fitting those skills into what we do, the fact you come from a physio background*

> *PHY7: In a nutshell I think you have made me aware of what we do on a daily basis without going outside of the norm, just by sitting and listening to people and actually dealing with their anxiety and squashing their fears to some degree can actually change the way they perceive pain and help them deal with it. I didn't think I had the tools…we've all got the tools we maybe don't realise and do we put them into practice enough*

6.4.2.2 Aspects of the patient-therapist encounter

A prominent focus of the discussion regarding the education programme concentrated on physiotherapists change in practice with regards to spending more time listening to the patient during the subjective assessment and how this influenced subsequent management. These discussions led on to the wider clinical encounter and management approaches, in particular self-management, which was specifically explored. Figure 6.6 illustrates the development of this theme.

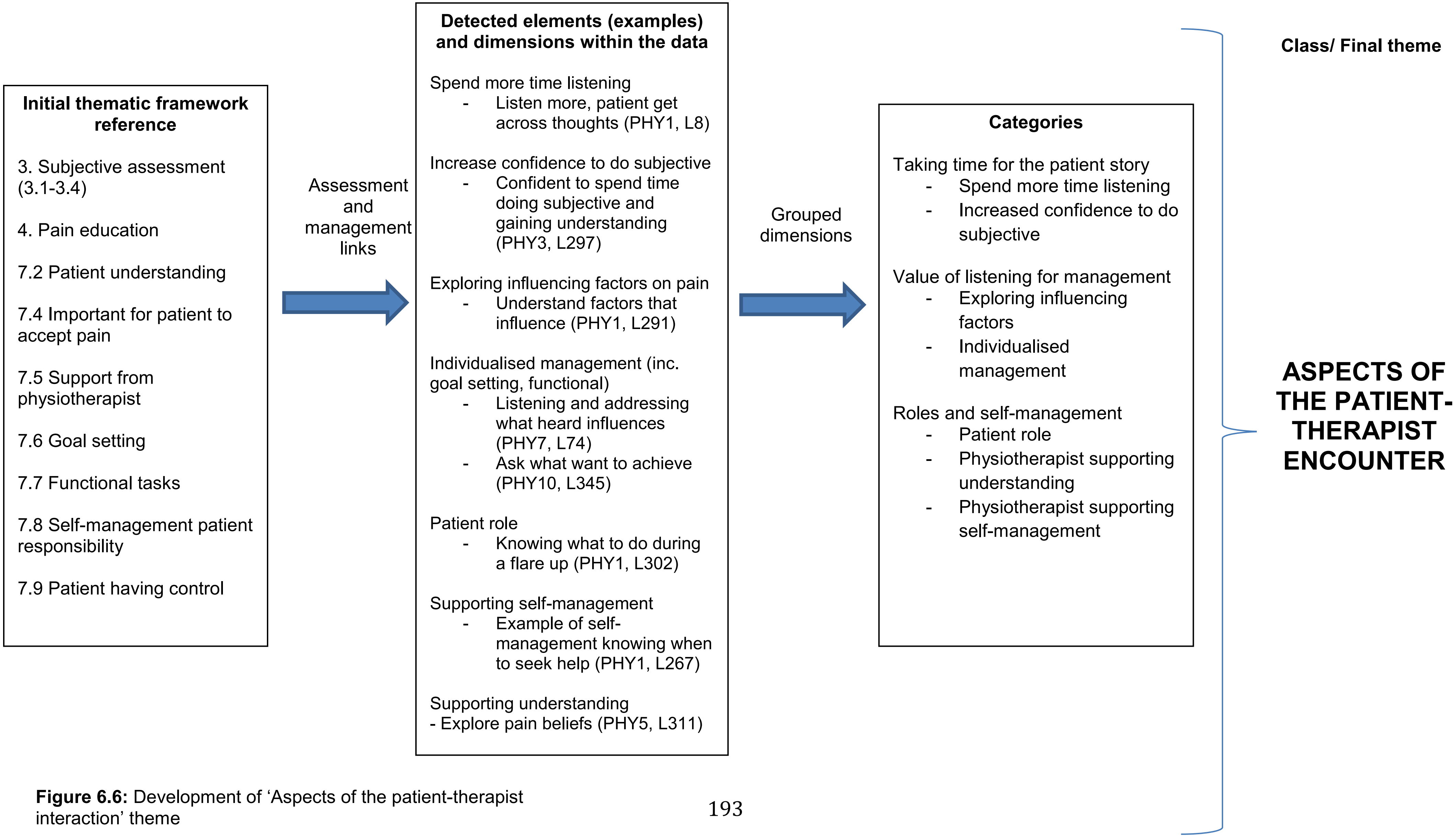
Taking time to listen to the patient story during the subjective assessment was something the physiotherapists placed more emphasis upon in clinical practice following the education programme. Having the confidence to spend more time allowing the patient to discuss what they felt was relevant and verbalise their thoughts and concerns, rather than having a predefined agenda influenced by structured assessment sheets.

> *PHY1: If we're spending a session talking, then we're spending a session talking*
>
> *PHY1: I think listening to people, just letting them sort of complete their thoughts and getting more to the end of the assessment ask a few more questions then come to your advice and feedback and link it back to what they were saying rather than the basic assessment tools tend to keep you focused on, right they're drifting off the question now so bring them back…they* (patients) *feel in a better place to listen because they've got everything out before I'm butting in*
>
> *PHY3: I think we have to be confident enough if we identify that this patient has had pain for a long time, then spend an hour doing that subjective assessment…often patients feel better after just doing that*

> *PHY3: Try not to lead the questions too much, try and keep it open*
>
> *PHY5: I think it’s made me more aware of listening subjectively…I tend to try and put stuff in the boxes and if it doesn’t go in the box I’m quick to disregard it but now I certainly am more considerate of everything else that may be going on as well so I do certainly give them more time, listening with regards to their pain*
>
> *PHY9: If you give people more time you will find they tell you things they wouldn’t have… the problem is we have these set assessment sheets and you have to follow them and I think sometimes it might not be a bad idea if we had a blank piece of paper*

Physiotherapists had an appreciation of the multidimensional nature of pain and the factors that can influence this experience. Throughout the patient therapist encounter, physiotherapists were actively considering what might be influencing someone’s pain. Unhelpful beliefs regarding pain were considered and targeted with physiotherapists striving to support changing this viewpoint. There was some integration of the biopsychosocial nature of the pain experience however at times this integration was less apparent. Physiotherapists sometimes made a judgment regarding what single factor dictated during a pain experience, choosing between mechanical or psychological.

> *PHY3: I spend more time treating patients targeting their beliefs about you know using words like crumbling spine, I’ll end up in a wheelchair, actually targeting that*
>
> *PHY3: What their beliefs are and what is causing their pain, have they got any underlying beliefs*
>
> *PHY7: I do sit back and listen to them and give them the opportunity to come out with it themselves and think what stressors could be making their pain worse*
>
> *PHY1: Part of what we’re talking about is getting their pain down, trying to understand what factors have made their pain levels so high because one might be a genuine there might be damage, in which case you need to get to the root of that, but also anxiety and stress can escalate it*
>
> *PHY9: I suppose establish whether there is a mechanical problem with it, anything else that’s going on whether its stress or anxiety*



Initial thematic framework reference

3. Subjective assessment (3.1-3.4)

4. Pain education

7.2 Patient understanding

7.4 Important for patient to accept pain

7.5 Support from physiotherapist

7.6 Goal setting

7.7 Functional tasks

7.8 Self-management patient responsibility

7.9 Patient having control

Assessment and management links

Detected elements (examples) and dimensions within the data

Spend more time listening
- Listen more, patient get across thoughts (PHY1, L8)

Increase confidence to do subjective
- Confident to spend time doing subjective and gaining understanding (PHY3, L297)

Exploring influencing factors on pain
- Understand factors that influence (PHY1, L291)

Individualised management (inc. goal setting, functional)
- Listening and addressing what heard influences (PHY7, L74)
- Ask what want to achieve (PHY10, L345)

Patient role
- Knowing what to do during a flare up (PHY1, L302)

Supporting self-management
- Example of self-management knowing when to seek help (PHY1, L267)

Supporting understanding
- Explore pain beliefs (PHY5, L311)

Grouped dimensions

Categories

Taking time for the patient story
- Spend more time listening
- Increased confidence to do subjective

Value of listening for management
- Exploring influencing factors
- Individualised management

Roles and self-management
- Patient role
- Physiotherapist supporting understanding
- Physiotherapist supporting self-management

Class/ Final theme

ASPECTS OF THE PATIENT-THERAPIST ENCOUNTER

Figure 6.6: Development of ‘Aspects of the patient-therapist interaction’ theme

Understanding of the condition and pain was seen as essential with regards to the future and self-management. Using pain physiology education was discussed and considered as valuable, however this was following specific questioning on this topic. There was a change with how physiotherapists reported explaining pain however with less focus on structure. Physiotherapists discussed their wider role providing advice; tools and a source of support making people feel valued and understood. Utilising pain physiology education posed a challenging task at times with physiotherapists finding it difficult to implement and know what level to start this at. While the value was certainly recognised, physiotherapists had hesitations in utilising this based on their own confidence and understanding.

> *PHY1: I talk more about the general areas rather than structures now so I find explaining lots about rather than saying your muscles are tight or you've got a bulging disc helping people understand there isn't one thing, we've got to treat the whole thing and switch towards function rather than a specific cause and help them to accept and the pain neurophysiology education so they can understand why the pain is so bad even though the scan or tests don't show it, explain that stuff to help with acceptance*
>
> *JM: What do you think of pain education as a tool to facilitate self-management?*
> *PHY6: Essential really*
> *PHY3: Yeah, I think it's essential*
> *PHY6: If they don't understand they wont be able to control and take responsibility*
>
> *PHY10: I've went down the being more chemicals at the end of the nerves in the skin…then you're not saying it's in their head, you're saying physically*
>
> *PHY1: I have gone through a very careful explanation in the past and then they didn't want to come in anymore as they thought I'd effectively just told them it's all in their head, which isn't what I said at all*
>
> *PHY3: You've obviously got some patients who are going to come in and are not ready to accept they've got chronic pain which means some of the things you might try and use from the training you're actually going to come across a brick wall*
>
> *PHY1: You have to be careful how you pitch it because it can get a bit too complex*

> *PHY10: I think it's something you have to be careful not to rush I found myself trying to do it too quickly…I think it's really useful but it's something you have to pick what to do from having messed it up a couple of times*
>
> *PHY5: I think the more in depth you understand it, the better you can explain it, my explanation at the minute would be awful compared to yours* (to JM)

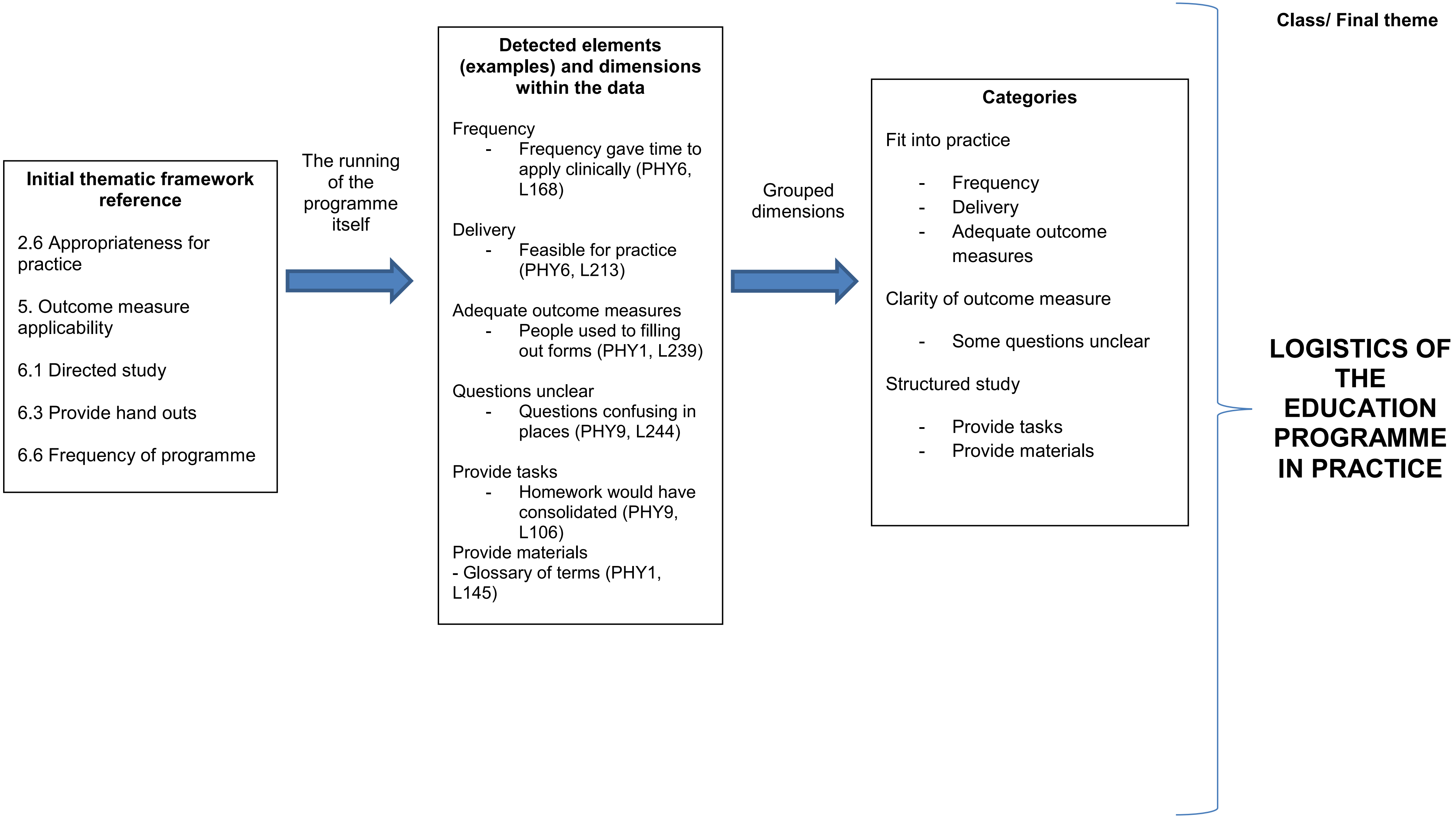
The outcome of the patient therapist encounter concentrated on the physiotherapists advocating patient responsibility, the need for acceptance and having control in the management of LBP but they also viewed themselves as having an important role in supporting people living with LBP to be able to manage and discussed an active partnership and people knowing when to seek help. Goal setting, exploring expectations and fitting management into and around functional tasks were each considered important.

> *PHY1: Things that factor in to being able to self-manage are, one is accepting you have pain and another is their understanding of the things that can influence it so they can manage*
>
> *PHY6: Take responsibility for their symptoms*
>
> *PHY9: Give them the tools, which you do through advice, exercises*
> *PHY10: Giving people the chance to go away and try these things and the chance to talk to you about what works for them*
>
> *PHY5: Giving people support if they need it*
>
> *PHY9: Accepting what they've got and they have the power to influence it*
>
> *PHY10: Rather than setting out how long they exercise, more go down a functional route, just with a blank sheet of A4 and ask things they want to achieve rather than go away and mobilise your back but almost sit down and take your physio head off and set some goals and how they will achieve those*

6.4.2.3 Logistics of the education programme in practice

The specific features of the education programme that physiotherapists found useful and development ideas related to those points are clear from the themes ‘providing a context for pain education’ and ‘aspects of the patient therapist encounter’. The education programme as an entity was explored; its overall suitability for practice and anything the participants felt could be improved or developed for future delivery. Figure 6.7 illustrates the development of this theme. Ultimately, the physiotherapists felt the education programme as it was with regards to structure, delivery and relevance for musculoskeletal physiotherapy was very appropriate to deliver in clinical practice. Delivery by a physiotherapist was valued and was viewed as adding positively to the programme enhancing engagement and application.

> *PHY1: I think lots of departments would love it*
>
> *PHY9: Everyone has in service training don’t they*
>
> *PHY3: For MSK departments it was brilliant…I think people would be really keen as we’re always looking for ideas for in service training and it was really relevant*
>
> *PHY6: I think its feasible… frequency gave time to apply clinically*
>
> *PHY9: I think had you been a nurse or somebody telling it to us I don’t know if I’d have been slightly less, not believing, but… less engaging if you weren’t a physio because you know our situation and time constraints, setting and all that stuff, had you been someone from management level coming down I’d be slightly less willing to take it on board*



Initial thematic framework reference

2.6 Appropriateness for practice

5. Outcome measure applicability

6.1 Directed study

6.3 Provide hand outs

6.6 Frequency of programme

The running of the programme itself

Detected elements (examples) and dimensions within the data

Frequency
- Frequency gave time to apply clinically (PHY6, L168)

Delivery
- Feasible for practice (PHY6, L213)

Adequate outcome measures
- People used to filling out forms (PHY1, L239)

Questions unclear
- Questions confusing in places (PHY9, L244)

Provide tasks
- Homework would have consolidated (PHY9, L106)

Provide materials
- Glossary of terms (PHY1, L145)

Grouped dimensions

Categories

Fit into practice

- Frequency
- Delivery
- Adequate outcome measures

Clarity of outcome measure

- Some questions unclear

Structured study

- Provide tasks
- Provide materials

Class/ Final theme

LOGISTICS OF THE EDUCATION PROGRAMME IN PRACTICE

Figure 6.7: Development of ‘Logistics of the education programme in practice’ theme

Whilst physiotherapists felt the outcome measures mapped with the programme and the amount was adequate, there was limited discussion around the outcome measures, with physiotherapists giving fairly closed responses to questions regarding their applicability. Physiotherapists were not surprised by the inclusion of outcome measures and felt used to this process. There was some points raised regarding the difficulty of interpreting some of the questions and one physiotherapist reported having back pain at the time, which they felt might have impacted their answers.

> *PHY1: I think people are used to filling out forms*
>
> *PHY10: I wouldn't have wanted much more*
>
> *PHY9: That was enough*
>
> *PHY3: I remember thinking it was difficult to categorise them*
>
> *PHY6: Some of them I felt I sort of wanted to ask a question to clarify it before I put it in and some of it was quite difficult and I also had a lot of back pain at the time I filled it in so I that influenced my answers quite a lot I think*
>
> *PHY9: They were slightly confusing in places, but that's just, that's just what they do, they like to confuse you, ask the same questions twice in two different ways*

A development to consider for future implementation of the programme would be more structured directed study. Regarding the theoretical aspect of the programme, physiotherapists commented that they would have valued more structured directed study and providing of materials. This was viewed as helping to prepare for the theoretical session and following this to consolidate learning and so the physiotherapist could make the directed study a priority rather than leaving it up themselves to decide and direct their reading following the education programme. Whilst physiotherapists found the topic interesting without structured tasks to consider did not explore the topic further.

> *PHY1: If we can do something to prepare to get our heads into the language of it*

> *PHY9: Maybe group sessions and going through some work talking about it or you could even recommend a paper or something*
>
> *PHY9: If I'd gone home, in another life and studied it for two or three days it would've gone into my head much better*
>
> *PHY1: Like homework*
>
> *PHY9: Something like that would've really consolidated it*
>
> *PHY10: I would've really liked a summary sheet because it was really interesting but I cant remember a lot of it*

6.5 Discussion

The feasibility study explored the acceptability of a pain education programme for physiotherapists in clinical practice. Utilising both qualitative and quantitative research allows for a comprehensive interpretation of the intervention (Bryman, 2006). As the study was concerned with the acceptability of the intervention, the qualitative findings will provide detail regarding this. However, exploring trends with the outcome measures in relation to related literature will facilitate consideration of their use in future studies. The education programme aimed to provide a practice relevant introduction to pain neurophysiology education with the aim to support physiotherapists to begin to support people with LBP to manage the biopsychosocial impact of this through understanding of the integrated nature of pain. Adult learning was considered with sessions delivered over time to allow for application and reflection (Chipchase, Johnston & Long, 2012).

The results gained from the outcome measures will be considered first in relation to existing literature that have utilised these outcome measures with a physiotherapy population. This will allow for comparison of scores among the physiotherapists in the current study and other studies. Table 6.4 re states the median pre and post scores for the outcome measures used in the current study for ease for comparison with other studies.

Table 6.4: Median pre and post outcome measure scores for physiotherapists in study 3

Outcome measure	Baseline score median (range, IQR)	Post intervention score median (range, IQR)	Change in median score
PABS-PT Factor 1	29 (19-34, 22.5-33.5)	25 (16-32, 19.5-29)	4
PABS-PT Factor 2	37 (33-41, 34.5-39.5)	37.5 (35-42, 35-40.5)	0.5
HC-PAIRS 15 item	47.5 (33-58, 36-52)	45 (35-58, 37-55)	2.5
HC-PAIRS 13 item	36 (24-40)	32 (26-42.5)	4

Table 6.5 displays the mean and SD of PABS-PT factors 1 and 2 scores from studies using this outcome measure as either a cross sectional measure or used to evaluate an intervention. Table 6.6 states the mean outcome and SD for HC-PAIRS from studies using this outcome measure as either a cross sectional measure or following an intervention. It must be noted that the studies below have reported their score in mean and standard deviation. The scores presented above are median and interquartile range. As mean and median are both measures of central tendency it was felt appropriate to compare the scores.

Table 6.5: Mean score PABS-PT for physiotherapists in studies using this measure

Study	**Number of participants who were physiotherapists**	**Physiotherapists Biomedical mean (SD) score**	**Physiotherapists Behavioural mean (SD) score**
Houben *et al.* (2005a)	69	29.2 (7.3)	37.1 (5.2)
Bishop *et al.* (2008)	580	31.1 (7.2)	32.5 (4.8)
Overmeer *et al* (2009)	42	Before education: 25.9 (7.6) After education: 17.8 (6.3) Change in score: 8.1	Before education: 41.4 (4.8) After education 43.5 (4.7) Change: in score 1.9
Derghazarian & Simmonds (2011)	108	Private sector: 32.0 (6.2) Public sector: 29.2 (7.3)	Private sector: 31.7 (4.8) Public sector: 32.9 (5.1)
Simmonds, Derghazarian & Vlaeyen (2012)	108	31.14 (6.67)	32.08 (4.83)
Hendrick *et al.* (2013)	170	31.12 (6.67)	31.76 (4.30)

Table 6.6: HC-PAIRS mean scores from studies using this measure (15 item unless otherwise stated)

Study	**HC-PAIRS mean (SD) score**
Rainville, Bagnall & Phalen (1995)	52 (10)
Houben *et al.* (2004)	15 item: 48.1 (9.4) 13 item: 40.7 (8.9)
Overmeer *et al.* (2009)	Before education: 41.8 (6.8) After education: 38 (6.3) Change in score: 3.8
Domenech *et al.*(2011) (Physiotherapy students)	Before education Control group: 61.2 (8.8) Experimental group: 62 (11.1) After education: Control group: 59.6 (9.8) Experimental group: 44.5 (12.1)
Slater *et al.* (2014) (13 point HC-PAIRS used) (Multiple healthcare professionals)	Before intervention: 43.2 (9.3) After intervention: 37.4 (11.6) Change in score: 5.8

Overmeer *et al.* (2009) carried out a biopsychosocial 8 day university course over eight weeks. The current feasibility study was of shorter duration and focused on pain neurophysiology education, but used the same outcome measures as this study. The current feasibility study follows the trend of Overmeer et al. (2009) with a greatest improvement on the PABS-PT biomedical scale and the biopsychosocial factor 2 showing less change (table 6.5). Overmeer *et al.* (2009) reported potentially recruiting a population of physiotherapists who were more biopsychosocially orientated at baseline given their higher scores in contrast to other studies. Although scores are higher than Overmeer *et al.* (2009) for the physiotherapists in the current feasibility study, there has been a change in biomedical beliefs, demonstrating the potential impact of a less intensive course on this aspect.

The current feasibility study was carried out in a UK NHS setting. A population from the UK of physiotherapists who took part in the PABS-PT as a survey by Bishop *et al.* (2008) over half were NHS physiotherapists (table 6.5). Their score were 5 points lower on PABS-PT factor 2 than baseline of this study and biomedical orientation 2 points higher. A lower baseline score for PABS-PT factor 2 and higher biomedical score than this study was also the case for Derghazarian & Simmonds (2011), Simmonds, Derghazarian & Vlaeyen (2012) and Hendrick et al. (2013) shown in table 6.5. Thus, the physiotherapists recruited for this study appear to be more biopsychosocially orientated at baseline, as can be seen with comparison to other studies, thus may be the reasoning to have demonstrated less change. The study by Overmeer *et al.* (2009) reflects a substantially lower set of scores than multiple other studies. Similarly, for HC-PAIRS (table 6.6) the baseline scores for the studies were all higher than this study median (47.5) demonstrating a stronger belief of impairment associated with pain; with the exception of Overmeer et al. (2009) whom again had a lower score. Thus, it may suggest their population does not reflect a typical physiotherapy population.

Studies that explored the 13 item HC-PAIRS show a considerable difference between the current feasibility study scores. The baseline median for this study was 36 whereas it can be seen from table 6.6 the score is considerably higher for Houben *et al.* (2004) and Slater *et al.* (2014). Even after Slater et al. (2014) evidence based pain management intervention the score is 37.4 whereas in this current feasibility study it is 32. Within this current study both the 15 item and 13 item score for HC PAIRS was considered due to the suggestion to remove two questions, which was one factor (Houben *et al.* 2004). Questions ten and thirteen, which were removed when exploring the 13-item HC PAIRS consistently reported the highest scores with each physiotherapist in the current study and thus dramatically influencing results. Exploring this demonstrates the influence the two questions were having on the overall score, removing two questions considerably reduced the HC-PAIRS score, thus showing the influence of those two questions, advocated for removal within the literature.

It is interesting to note the variation in scores, this study showed little variation with PABS-PT factor 2, suggesting similar views among the physiotherapists, however HC-PAIRS showed a large variation in the range of scores. This is consistent with the studies reported showing a larger variation, and thus with this study having a small sample size it is difficult to draw conclusions due to the impact of variability on a small sample.

Although explanation of scores against current literature can provide some insight into the value of the education programme and suitability of the outcome measures, focus groups with participants following the education programme allowed for more detailed insight into the acceptability of the programme and areas for development.

Physiotherapists within the current study reported gaining a lot of value from listening to the recorded extracts, finding this to greatly influence their practice of considering the whole person and the impact of pain on day to day life. Session two of the pain education programme developed shares some similarities with a study by Toye and Jenkins (2014) that developed a pain film based on findings from a qualitative synthesis that focused on experiences of chronic musculoskeletal pain. These clips were delivered for healthcare professionals working with people living with pain as part of some pain education. The population was mainly general practitioners with some other professionals and included one physiotherapist (Toye & Jenkins, 2014). Similarly to the current feasibility study education programme, participants reported the value of seeing the impact of pain on the individual and how this encourages questioning regarding day to day and quality of life and consider the patient-therapist interaction following this (Toye & Jenkins, 2014).

The value of dissemination of qualitative research in an accessible way has been highlighted in Toye & Jenkins (2014). The value of listening to the patient story enhanced physiotherapists understanding of that person's pain beliefs. A systematic review by Jeffels and Foster (2003) emphasises the key role a physiotherapist can play in influencing the pain experience both positively and negatively. How physiotherapists address beliefs and provide information can influence the experience (Jeffels & Foster, 2003) thus spending time to understand this experience through listening may lead to a better understanding of beliefs.

O'Sullivan *et* al (2013) as part of their workshops for physiotherapists used patient case studies in real life format and scientific evidence. Although O'Sullivan *et al.* (2013) had intensive delivery and incorporated functional movement the study shares similarities with the current feasibility study combining a theoretical aspect and patient extracts. Alongside this, the study being evaluated shares similarities with O'Sullivan *et al.* (2013) with feedback regarding their programme being similar with regards to finding scientific information useful and the value of listening to understand and guide what unhelpful beliefs people may have associated with their pain. However, this study develops specifically what physiotherapists found valuable with respect to providing more detail with regards to this, as O'Sullivan *et al.* (2013) provide a very brief overview of what physiotherapists valued. Alongside this O'Sullivan *et al.* (2013) only discuss positive aspects of the programme, which is highlighted by the authors, whereas the current study highlights some challenges physiotherapists face. The current study has uncovered some concerns physiotherapists face with regards to their knowledge regarding pain science and utilising this as an educational approach. In relation to self-management however physiotherapists feel patient understanding of this concept is vital.

The education programme in the study did not provide physiotherapists with tools to categorise patients as per the STaRT back tool (Hill *et al.* 2011). Training regarding STaRT back has received positive feedback from physiotherapists in the literature for increasing confidence with psychosocial barriers to recovery and skills for complex psychosocial problems (Sanders *et al.* 2014). The current study did not focus on specific skills for psychosocial problems but used pain science as a means to show the integrated nature of the experience and patient extracts to illustrate beliefs that may be influencing the pain experience. The education programme is not meant to replace or rival other education programmes, its focus is a short course aimed to be integrated into in service training clinical practice to enhance physiotherapists understanding of the integrated nature of pain and influences on this. The course with pain neurophysiology education aimed to provide a foundation (McGrath *et al.* 2014; Moseley, Nicholas & Hodges, 2004).

Similarly to Sanders *et al.* (2014) physiotherapists within this study began to appreciate the impact of psychosocial influences on the pain experience, showing the value of a less time intensive course. This baseline understanding and mechanisms to easily integrate into clinical practice may be suited to day to day clinical practice where it may not be possible to have specific training. For example, as per STaRT back three or nine day course (Main *et al.* 2012). The education programme aims to complement and be integrated to clinical practice, not solely focus on pain education and this be a one-dimensional approach. Pain education is intended to be integrated into practice with other interventions (Clarke, Ryan & Martin, 2011).

Although physiotherapists reported an increased confidence regarding considering unhelpful beliefs during a subjective assessment; physiotherapists discussed a lack of confidence with specifically explaining pain neurophysiology to patients due to their own perceived knowledge. This is interesting to note, as in relation to self-management understanding of pain and education regarding this is often advocated (Stewart *et al.* 2014; Nicholas *et al.* 2013). The 'pain neurophysiology questionnaire' has been used to explore changes in knowledge following education (Moseley, 2003b). Utilising this in the future may highlight the knowledge of physiotherapists following education and allow for further development. Alongside this, allowing physiotherapists more time to utilise pain neurophysiology education and have follow up and support sessions available may be beneficial, the STaRT back programme adopts this approach (Main *et al.* 2012). The qualitative aspects of this study provide valuable evidence regarding pain neurophysiology education, as Moseley (2003b) delivered a three hour pain physiology session for healthcare professionals and found an increase in knowledge, the current study develops this through physiotherapist perceptions of challenges faced in clinical practice and how this could be improved.

In relation to the education programme format itself, physiotherapists valued the almost 'lecture based' approach initially regarding pain science, however as physiotherapists reported they would have valued directed study from the programme, this may have enhanced their learning to become deeper and enhancing the usefulness of a the lecture (Briggs & Henderson, 2014).

There are some limitations of the study that must be considered. The study had a small sample size and due to having a range of scores but with only ten people it is difficult to draw conclusions as variation may be normal, but this is currently unclear with the small sample used. Alongside this, non parametric tests have the drawback of not being as sensitive to change (Dancey, Reidy & Rowe, 2012). The researcher who delivered the programme also carried out the focus groups with participants, thus this may have influenced responses generated. However, there were some suggestions for improvement and not all feedback was positive. On reflection on the part of the researcher not providing a lot of directed study, this was due to the researcher being mindful of the time factors in clinical practice and personal experience may have influenced this decision.

Whilst physiotherapists valued the programme, the amount of pain neurophysiology education proved too much for one session and may benefit from being delivered over a period of time. The case study recordings gained the most positive feedback and reported influencing practice. Primary consideration needs to be given to advocating pain neurophysiology education for clinicians and ways to improve their confidence in delivery of this.

The findings from this mixed methods feasibility study of a pain education programme implemented in clinical practice provide valuable insights for the future development of pain education programmes for physiotherapists. Physiotherapists considered the programme to be applicable in clinical practice in terms of content and delivery. All physiotherapists attended at least two of the sessions, with 80% attending all sessions. Physiotherapists reported the relevance to practice and length of time of delivery was appropriate. A key strength of the programme was the applicability to real life practice, and something which physiotherapists valued. However, physiotherapists lack confidence in their pain biology knowledge, thus more time is needed with regards to this. The PABS-PT outcome measure followed the trend of similar studies, and is worthy of exploration in a future study. The HC-PAIRS outcome measure showed great variation in scores and LBP of the individual physiotherapist was reported to influence the answers given. Overall, the intervention was viewed as applicable in clinical practice.

Pain neurophysiology education linked to patient extracts has developed physiotherapists understanding of the multidimensional nature of pain, and influences they can address in the clinic. Thus, in this regard it is a potentially useful means to support physiotherapists to consider the integrated nature of pain to support management of this. However, physiotherapists report a lack of confidence in their ability to portray pain neurophysiology education to patients, thus future studies may consider spending more time on this aspect. Physiotherapists felt people living with LBP understanding of pain was imperative for self-management, thus something that would be considered as an adjunct to supporting this.

7. General Discussion

7.1 Overview

Self-management involves the individual living with a condition being able to manage the biopsychosocial impact of their health condition with support if required (Stewart *et al.* 2014; Boyers *et al.* 2012; Wilkinson & Whitehead, 2009). LBP is a biopsychosocial experience with multiple influences and shows a great variation of its impact among individuals (Pincus *et al.* 2013). This thesis aimed to explore self-management in the context of LBP and support concerning self-management with a focus on physiotherapy. The thesis had the following overarching aims:

- To gain an understanding of self-management in the context of LBP
- To explore people living with LBP understanding and experiences of self-management of LBP
- To explore physiotherapists understanding and experiences of self-management of LBP
- To explore the role of the physiotherapist in self-management of LBP
- To explore physiotherapists training needs regarding self-management in their clinical practice
- To design, implement and assess the feasibility of an education programme for physiotherapists in clinical practice

The qualitative synthesis considering people living with LBP and physiotherapists (chapter 3) began to address the aim of gaining an understanding of self-management in the context of LBP. A search of the literature yielded no qualitative synthesis solely focusing on self-management of LBP from the patient and physiotherapist perspective. Understanding of self-management in this context considered the person living with LBP to have control over the impact of LBP, being actively involved and engaged in strategies, most often exercise. Individuals seeking a cure for LBP and not actively engaging in strategies were questioned as to if they were self-managing their LBP. Consideration of some barriers to self-management such as time and capability began to illuminate some difficulty physiotherapists face.

The findings of the qualitative synthesis (chapter 3) share some similarities with extant qualitative synthesis exploring the experience of living with LBP, albeit with some different studies included. Acceptance was found to be important to be able to manage the impact of LBP and collaboration with healthcare professionals at times to be of value (MacNeela *et al.* 2013; Snelgrove & Liossi, 2013). People looking for a cure prevailed and choose strategies that were of a physical nature (Bunzli *et al.* 2013; Snelgrove & Liossi, 2013).

Within the qualitative synthesis (chapter 3) self-management was often discussed separately from the main themes. Given consideration of the difficulties highlighted in multiple qualitative syntheses; integration of self-management and the wider biopsychosocial picture was deemed necessary. Within a study in the synthesis self-managing related to exercise or self-management strategies of exercise dominated the discussion (Crowe *et al.* 2010a; Cooper, Smith & Hancock, 2009; May, 2007). Whilst this is an important aspect of self-management, the synthesis illuminated the need to consider self-management in a wider context.

A further key finding of the qualitative synthesis (chapter 3) was revealing that physiotherapist views were limited within the literature. The limited information that was available highlighted some of the difficulties and frustration physiotherapists felt at times with regards to supporting management of LBP. As support is frequently deemed an important aspect of self-management found in the qualitative synthesis (chapter 3) and extant studies focusing on self-management, this warranted exploration (Dwarswaard *et al.* 2015; Stewart *et al.* 2014; Lorig, Halsted & Holman, 2003; Bodenhiemer *et al.* 2002).

A review of the literature and the primary research studies carried out in this thesis has highlighted the difficulties people living with LBP face and the challenges associated with managing the biopsychosocial impact of the condition. In particular from the perspective of people living with LBP, worry of recurrence and worsening in the future and a lack of control of LBP was apparent. With each of these being strong predictors of poor outcome (Campbell *et al.* 2013; Foster *et al.* 2010;). Interviews with people living with LBP (chapter 5) highlighted that LBP could influence people's day-to-day life and cause great concern for the future. This concurred with many studies exploring the experience of LBP (MacNeela *et al.* 2013; Corbett, Foster & Ong, 2007; Crowe *et al.* 2010b). Within chapter 5, although some individuals were engaging in strategies such as exercise, the wider social and emotional impact at times was great, and thus highlighting the need to consider the bigger picture when supporting self-management and not solely focus on partaking in strategies.

A prominent finding within the physiotherapist focus groups (chapter 4) was that psychological influences on pain was viewed as challenging and at times physiotherapists demonstrated separation of the physical and psychological aspects of a pain experience. Frequently, physiotherapists questioned their suitability to help this client group and were despondent feeling unable to support people living with LBP to be able to manage their condition. Extant literature focusing on the physiotherapist perspective with respect to the clinical encounter has found physiotherapists to highlight difficulty with perceived psychosocial influences on pain (Jeffrey & Foster, 2012; Slade, Molloy, 2012; Daykin & Richardson, 2004). These difficulties prompt questioning as to whether the current definitions of self-management are occurring in clinical practice, as these encompass supporting an individual to manage the multifactorial influences of their condition (Stewart *et al.* 2014; Wilkinson & Whitehead, 2009). Physiotherapists are encouraged to support self-management of LBP, yet face many personal barriers in feeling able to do so at times. In line with current literature advocating support for healthcare professionals with regards to self-management (Lawn & Schoo, 2010) and LBP (Snelgrove & Liossi, 2013; Darlow *et al.* 2012) chapter 4 highlighted the focus of support being required with regards to integrating the pain experience, expanding on this issue raised in physiotherapist interviews by Sanders *et al.* (2013).

Generating an understanding of self-management to further meet the first over arching aim of the study highlighted people living with LBP at times found self-management difficult and physiotherapists felt this could be difficult to achieve but also something at times viewed as a last resort. Self-management as being imposed on people has been highlighted within the literature focusing on self-management as a concept (Kendall *et al.* 2011), however this study has developed this understanding in relation to LBP and physiotherapy.

The impact of LBP on some individuals in chapter 5 was profound, and due to lack of understanding of why they were experiencing pain, degree of distress and concern were unable to take full responsibility for their LBP and desired support from physiotherapists. However, people who did not want to be actively involved and wanted a cure were seen as difficult by physiotherapists in both chapter 4 and current literature (Jeffrey & Foster, 2012; Daykin & Richardson, 2004). Thus a potential issue is apparent that those requiring the most support may not receive this. The qualitative synthesis (chapter 3) and primary qualitative studies (chapter 4 and chapter 5) highlighted the need to take a step back and consider the physiotherapist and their needs due to their important role as viewed by people living with LBP in supporting self-management.

An education programme for physiotherapists in chapter 6 of the study considered the current literature and primary studies carried out to develop an appropriate means of supporting physiotherapists to support self-management of LBP. Physiotherapists viewed psychosocial issues as a threat at times, and demonstrated a lack of integration of the pain experience, concurred by other studies with albeit a different focus (Singla *et al.* 2014; Sanders *et al.* 2013; Slade, Molloy & Keating, 2012; Daykin & Richardson, 2004). Providing pain neurophysiology education allowed physiotherapists to consider the biopsychosocial impact of LBP, which has been recommended to change attitudes and beliefs (Darlow *et al.* 2012) and utilize patient narratives to highlight how their wider day to day life and psychosocial influences can be integrated (Goldingay, 2006b). Pain education for physiotherapists provided a means to integrate the pain experience and resulted in physiotherapists being more aware of the experience of pain as a whole during clinical consultations. This education programme was viewed as acceptable for clinical practice by physiotherapists. Thus warrants further investigation in clinical practice.

There was a clear contrast with the difficulties physiotherapists reported to face with regards to supporting people living with LBP in chapter 4 focus groups in comparison with chapter 6 focus groups following the feasibility study. The physiotherapist focus groups in chapter 6 following the educational intervention demonstrated physiotherapists discussing ways in which they could support people living with LBP and demonstrated knowledge regarding the integration of the pain experience and beliefs they could address during the clinical consultation. The focus was directed at what physiotherapists felt they could do. However, it must be noted that the researcher that delivered the education programme carried out the focus groups, thus may have influenced the participants to discuss the benefits following the programme.

In consideration of the aims of this thesis, an understanding of self-management in the context of LBP has been generated through people living with LBP and physiotherapist experiences and perspectives. These experiences and perspectives were integral to development of a pain education programme for physiotherapists. Due to a shift in physiotherapists reported understanding of the integrated nature of pain, this leaves opportunity to further explore this impact on a wider physiotherapist population following recommended adjustments to the education programme to be discussed.

7.2 Implications for Practice

7.2.1 Physiotherapy, Self-Management and LBP

This thesis has considered two multifactorial, complex concepts that physiotherapists encounter in clinical practice. Self-management is not something that can be achieved alone and healthcare professionals have a key role in providing support in particular knowledge that is individualised and integrated into daily life and having the choice to see healthcare professionals to develop understanding or in response to symptoms (Dwarswaard *et al.* 2015). However, it has emerged from chapter 4 of this thesis that at times self-management could be considered when it was felt all options had been exhausted and sole individual responsibility was advocated.

Chapter 4 demonstrated a dominance of difficulties with this client group, linked with other literature and psychosocial issues, splitting biological and psychological that corroborates other studies (Singla *et al.* 2014; Sanders *et al.* 2013). It was known within the literature that physiotherapists might favour those who are seen to be adhering to treatment or being actively involved (Slade *et al.* 2012; Jeffrey & Foster, 2012). It is recognised that healthcare professionals can impose what they think is appropriate for self-management (Kendall *et al.* 2011). This current study develops this in relation to LBP self-management being considered as a last resort at times by physiotherapists.

Chapter 4 explored physiotherapists' perspectives of self-management, which centred at times on being the patient responsibility; this seems a misnomer due to the wealth of literature describing the day-to-day struggles of people living with LBP. An even greater paradox is physiotherapists feeling unable to help people with LBP yet advocate self-management, which they term patient responsibly. Both physiotherapists and patients at times are uncertain what to do, and thus in relation to self-management, a favourable outcome will not be gained.

Chapter 1 introduction provided an overview of factors that predict poor outcome with LBP. Consistently, people report concerns of worsening pain for the future and inability to control the impact of this, which featured strongly in chapter 5 and extant literature. Reduced control and perceived worsening of pain are each predictors of poor outcome (Foster *et al.* 2010). Self-efficacy is often related to both LBP and self-management, and from studies in this thesis alongside wider literature, it can be seen control is something people living with LBP have difficulty with. People being told to self-manage due to the agenda of the healthcare professional (Kendall *et al.* 2011) seems a contradiction. Further, self-management and keeping active may not seem plausible to people living with LBP with low perceived control (Foster *et al.* 2010). If self-management requires control, then dictating to someone who does not feel confident in their ability to manage is not control, thus they ultimately may not be ‘self-managing’. Thus, if the client group does not see the reason for being actively involved in their management, and physiotherapists find those who will not be actively involved difficult (Chapter 4; Sanders *et al.* 2013; Slade *et al.* 2012) then this presents a problem for self-management. The use of ‘self-management’ for a last resort is not therefore compatible with what self-management aims to achieve.

A dichotomy is apparent within this thesis and current literature as numerous studies discuss people’s fear and concern for the future regarding pain returning and worsening, with avoidance and withdrawal socially being prominent (Snelgrove & Liossi, 2013; MacNeela *et al.* 2013). Bunzli *et al.* (2013, p.913) powerfully state, “individuals with CLBP engage in a day to day battle to control their pain”. This battle must be considered in the context of self-management, as battle does not suggest managing the biopsychosoical impact of LBP. As highlighted within the qualitative synthesis (chapter 3) that often discussion of self-management is separated. As considered in chapter 5, there are individuals with LBP unable to manage the wide ranging impact of their LBP.

There was already a wealth of literature with regards to people’s experiences of living with LBP, however less so specifically focused on self-management, and considering daily life and impact of this. This thesis does not claim to have highlighted new difficulties people with LBP face, but to encourage healthcare professionals, in particular physiotherapists to consider these in relation to self-management and the mismatch that may be apparent. Snelgrove & Liossi (2013) note potential is limited if self-management is not provided in a biopsychosoical context. In relation to physiotherapy, if physiotherapists are not approaching LBP in an integrated manner and are feeling uneasy and challenged by this integration, then it is unjust to expect people to live with LBP independently if they are expressing difficulties and concerns.

The unease towards psychosocial factors was profound in the physiotherapist focus groups (chapter 4) and literature regarding physiotherapist perspectives (Singla *et al.* 2014; Sanders *et al.* 2013; Daykin & Richardson, 2004). Further, physiotherapists expressed a lack of time within chapter 4, so being mindful of this was necessary. The short pain education programme for physiotherapists aimed to enhance integration of pain into clinical practice and to reduce the unease physiotherapists at times associated with a pain experience. Further, this was also proposed as a means to address some of the psychosocial influences in practice. It is acknowledged that pain neurophysiology education alone may change knowledge, but has limited impact on perceived disability of people with LBP (Moseley, Nichoals & Hodges, 2004). However it can provide a basis, having improved understanding for the development of increased function and activity (Moseley, Nicholas & Hodes, 2004). Thus should be integrated with wider interventions (Clarke, Ryan & Martin, 2011). The chapter 6 physiotherapist focus groups have demonstrated the value of pain education for physiotherapists to develop understanding the pain experience and integrating this during subjective assessments within the clinic. Further, this understanding enhanced people living with LBP credibility from the perspective of the physiotherapists in chapter 6. This is something which people living with LBP strongly desire (Bunzli *et al.* 2013).

Self-management encompasses self-efficacy, understanding of condition and behaviour change (Stewart *et al.* 2014; Newman, Steed & Mulligan, 2004). Pain neurophysiology education has been shown to influence self-efficacy (Ryan *et al.* 2010), understanding (Moseley, 2003) and provide a basis on which to build from this understanding (Moseley, Nicholas & Hodges, 2004). Thus the integration of these two concepts provides a mechanism for understanding and improved control to be integrated into supporting self-management. Pain neurophysiology education was used as means to consider the patient story to begin to appreciate the impact of LBP on daily life, the emotional impact, understanding, concerns for the future, and provide a means to begin to address this. In this sense beginning to consider the physical, psychological and social aspects of the condition thus related to self-management, managing the biopsychosocial impact.

7.3 Limitations

The qualitative research undertaken in chapters four, five and six were restricted to one Trust within the NHS, of which two departments participated in the study. There is the potential that training or approaches physiotherapists participated in may differ from other NHS departments, as variation will occur between departments. Thus, this may have influenced the focus of their discussion, consequently the themes generated and thus transferability of the findings.

The analysis of all qualitative data was carried out by JM, thus one perspective from a physiotherapy background was considered. This would have influenced the focus of the data analysis, although a clear audit trail was made through the Framework analysis. Involving others in the analysis of data would have allowed for multiple perspectives and discussion to emerge potentially deepening the interpretation of the data (Greenhalgh, 2014).

The feasibility study in chapter 6 did not use a control group, thus interpreting change before and after the education programme cannot be attributed to the programme (Robson, 2005). However, the focus of the programme was to investigate the acceptability of education programme to integrate into clinical practice. Exploration of results from the outcome measures used allowed comparison with other studies with respect to physiotherapist scores in this study and of the wider physiotherapy population. Physiotherapists who were not taking part in the education programme study sometimes attended one of the sessions or some of the session. Thus, they may have influenced participants who were partaking in the study.

The principal researcher (JM) carried out the focus groups after delivering the education programme intervention. There was a range of positive feedback generated, and there is the prospect that the researcher may have had an influence on participant responses. However there were some suggestions made for the improvements of the education programme in the future, and a criticism regarding the focus of case studies, so there was some balance with feedback generated.

7.4 Future research

A key aim of this study was to test the feasibility of an education programme for physiotherapists in clinical practice. With regards to acceptability of content and timing of delivery this was felt appropriate. However, future development of the education programme would consider delivery of the theoretical aspect of pain neurophysiology education. Physiotherapists viewed the length of delivery focusing on this being too long, and would benefit from directed study. Alongside this development of physiotherapists utilising pain neurophysiology education and spending more time focusing on this aspect is required to understand the true value physiotherapists associate with this in clinical practice.

The focus groups were carried out one month after the education programme. This may not have given physiotherapists enough time to develop and utilise the concepts discussed within the education programme. Future studies would warrant exploration over a longer period, with both outcome measures and focus groups. A larger sample of physiotherapists from different NHS Trusts would allow to build up a more generalizable view of the impact of the education programme for physiotherapists. Alongside this, consideration of whether HC PAIRS outcome measure is appropriate given the focus of the study. Within the current study this demonstrated a wide variation of scores. However, attitudes and beliefs of physiotherapists do not give information regarding behaviour (Pincus, Santos & Vogel, 2012). Thus, observation of physiotherapists in clinical practice would allow for more detailed exploration of if the concepts discussed within the education programme actually occur in clinical practice, with this being done with respect to the clinical encounter by Daykin and Richardson (2004). Ultimately, patient outcomes will need to be considered following education of physiotherapists to determine if this has had a positive influence the patient experience and quality of life (O'Sullivan *et al.* 2013; Overmeer *et al.* 2011).

There is a growing awareness of the emphasis required on pain management education in undergraduate education (Ryan, 2015). One study has explored the impact of a two three-hour biopsychosocial training sessions with case studies on the attitudes and beliefs of physiotherapy students, with promising results (Domenech *et al.* 2011). Specific pain neurophysiology education as an adjunct to extant pain management teaching could be explored within the physiotherapy student population.

7.5 Overall Original Contribution to Knowledge

The integrated findings from the three phases of this thesis have developed the evidence base related to physiotherapy practice in a number of ways. Self-management is a frequently used term with implicit understanding amongst professionals of what this entails, uncovered in the physiotherapist focus groups (chapter 4) as being the ultimate aim of physiotherapy. The consideration of how self-management is understood in the context of LBP, and how physiotherapists identify this and support this has been illuminated.

Qualitative syntheses existed exploring the experience of living with LBP, however the qualitative synthesis in this thesis was the first qualitative synthesis focusing specifically on self-management of LBP from the patient and physiotherapist perspective. No qualitative synthesis were located that had included the physiotherapist perspective of self-management of LBP. The qualitative synthesis has built upon current evidence regarding people living with LBP. The qualitative synthesis provides an insight into how self-management is currently understood and portrayed in the context of LBP and the influence of support, in particular physiotherapy support on this. However, the review also proposed self-management at times to be task focused, lacking consideration if are people managing the impact of LBP on their daily lives.

Focus groups with physiotherapists (chapter 4) developed understanding of self-management from the physiotherapist perspective, with regards to physiotherapists having different conceptualisations of self-management depending on the situation or individual. Physiotherapists aim for self-management, however although this is interpreted as controlling the impact of LBP and the person living with LBP taking responsibility it emerged at times as a last resort when physiotherapists were unsure of how to further support individuals. Extant studies focusing on the physiotherapist and LBP had provided limited focus on self-management from their perspective.

There is an increasing awareness developing within the literature of the challenges felt by physiotherapists regarding psychosocial influences on the pain experience. It was already apparent within the literature that physiotherapists found psychosocial influences difficult and found some people living with LBP difficult to support (Sanders *et* al. 2013; Jeffrey & Foster, 2012; Daykin & Richardson, 2004). This study brings together these issues with the concept of self-management. If there are such difficulties faced among physiotherapists and self-management involves people managing the biopsychosocial impact of their health condition, then physiotherapists require more support to achieve this.

Alongside developing awareness in this area, considerations of psychosocial influences have been taken forward to explore these challenges in relation to supporting self-management of LBP. As self-management involves the person living with LBP to manage the biopsychosocial impact of their condition with support if required, this necessitates physiotherapists being confident in their ability to help people living with LBP to achieve this. This study illuminated the fact that although physiotherapists have a key role in supporting self-management, physiotherapists themselves require support as there was at times a lack of integration of the physical and psychological dimensions of the pain experience demonstrated by participants.

Pain education for physiotherapists aimed to provide a means to illustrate the integrated nature of the pain experience to ultimately support self-management. The focus groups in chapter 6 provided new understanding of physiotherapists' implementation of pain neurophysiology education in clinical practice. A key finding was physiotherapists valued learning about pain neurophysiology education and this contributed to their clinical practice with regards to understanding the various influences on a pain experience. Further, they felt pain education to be a fundamental part of self-management. However, what this study has highlighted is that physiotherapists find delivering pain neurophysiology education in practice challenging and require further training with regards to increasing their confidence with this.

7.6 Summary and Conclusions

Self management of LBP should be considered in relation to not only providing people living with LBP support but also support for physiotherapists working with this population. Physiotherapists are a key source of support for self-management of LBP and at times can face difficulties supporting this client group. This illustrates a misnomer between people who feel they need support due to being uncertain regarding their LBP and having concerns for the future. Physiotherapists found people with psychosocial factors contributing to their pain experience challenging, when quite often this will be the client group who may seek support. Pain education and patient extracts appear to facilitate physiotherapists to view pain as a more integrated experience. However, physiotherapists require time to develop expertise in delivering pain neurophysiology education in clinical practice and their confidence in this reflects its use.

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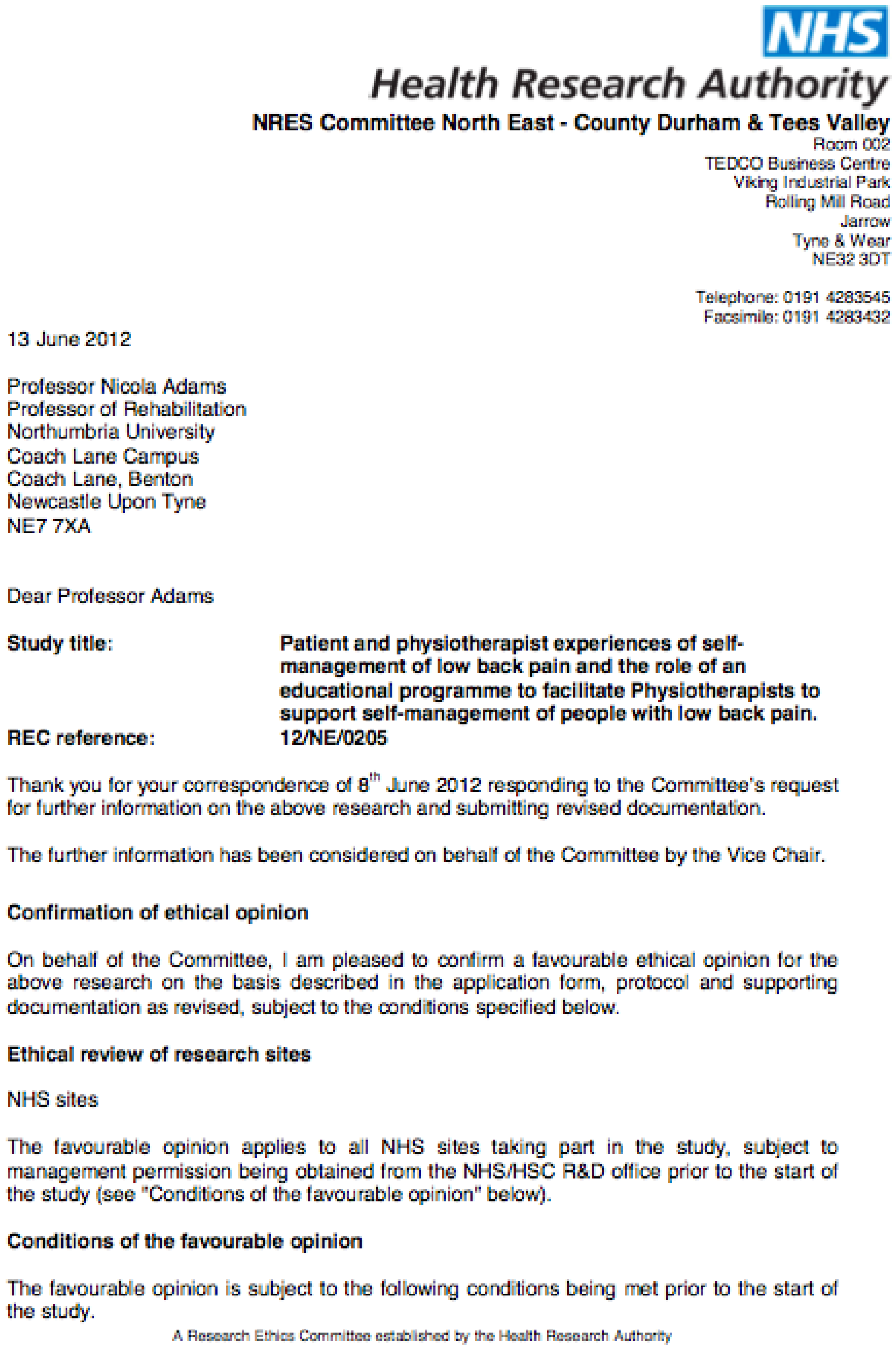
Appendix 1: National Research Ethics Service Favorable Opinion Letter



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13 June 2012

Professor Nicola Adams
Professor of Rehabilitation
Northumbria University
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Coach Lane, Benton
Newcastle Upon Tyne
NE7 7XA

Dear Professor Adams

Study title:	**Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate Physiotherapists to support self-management of people with low back pain.**
REC reference:	**12/NE/0205**

Thank you for your correspondence of 8th June 2012 responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Vice Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Appendix 2: Articles excluded at full text screen for the qualitative synthesis

Study	**Reason for exclusion**
ALBERT, W. J., CURRIE-JACKSON, N. & DUNCAN, C. A. (2008) 'A survey of musculoskeletal injuries amongst Canadian massage therapists'. *Journal of Bodywork & Movement Therapies*, 12, pp. 86-93.	Not qualitative research
ALLEN, M., IEZZONI, L. I., HUANG, A., HUANG, L. & LEVEILLE, S. G. (2008) 'Improving patient-clinician communication about chronic conditions: description of an Internet-based nurse E-coach intervention'. *Nursing Research*, 57, pp.107-112.	Not qualitative research
ANDERSSON, H. I., EJLERTSSON, G., LEDEN, I. & SCHERSTÉN, B. (1999) 'Impact of chronic pain on health care seeking, self care, and medication. Results from a population-based Swedish study'. *Journal of Epidemiology & Community Health*, 53, pp.503-509	No detail if low back pain was population included Not qualitative research
ARCANJO, G. N., VALDES, M. T. M. & DA SILVA, R. M. 2008. Quality of life in the perception of women participating in educative workshops about back pain. Ciencia & Saude Coletiva, 13, 2145-2154.	Not written in English
ARNSTEIN, P. (2004) 'Chronic neuropathic pain: issues in patient education'. *Pain Management Nursing,* 5, pp.34-41.	Not qualitative research
ARNSTEIN, P. (2007) 'Learning to "live with" chronic pain: lessons from Mrs. Tandy'. *Topics in Advanced Practice Nursing*, 7, pp1-8	Not qualitative research
AUSTRIAN, J. S., KERNS, R. D. & REID, M. C. (2005) 'Perceived barriers to trying self-management approaches for chronic pain in older persons'. *Journal of the American Geriatrics Society*, 53, pp.856-861	No detail if chronic or recurrent low back pain was the population included
BABB, R. (2009) 'Low back pain recovery'. *Rehab management,* 22, pp.22-23.	Review article
BAIR, M. J., MATTHIAS, M. S., NYLAND, K. A., HUFFMAN, M. A., STUBBS, D. L., DAMUSH, T. M. & KROENKE, K. 2008. "Nothing works for my pain": A qualitative study of barriers and facilitators to chronic pain self-management. *Journal of General Internal Medicine*, 23, pp.231-232.	Abstract only. Full text Bair *et al.* (2009)
BAIR, M. J., MATTHIAS, M. S., NYLAND, K. A., HUFFMAN, M. A., STUBBS, D. L., KROENKE, K. & DAMUSH, T. M. (2009) 'Barriers and facilitators to chronic pain self-management: a qualitative study of primary care patients with comorbid musculoskeletal pain and depression'. *Pain Medicine*, 10, pp.1280-1290.	Entire sample was not chronic or recurrent LBP
BALAGUE, F., MANNION, A. F., PELLISE, F. & CEDRASCHI, C. (2012) 'Non-specific low back pain'. *Lancet*, 379, pp.482-491.	Not qualitative research
BARRIE, J. (2011) 'Patient empowerment and	Not qualitative research

choice in chronic pain management'. *Nursing Standard*, 25, pp.38-41.	
BARRY, L. C., GILL, T. M., KERNS, R. D. & REID, M. C. (2005) 'Identification of pain-reduction strategies used by community-dwelling older persons'. *Journals of Gerontology Series A: Biological Sciences & Medical Sciences*, 60A, pp.1569-1575.	Entire sample was not chronic or recurrent LBP Self-management was not the focus Not qualitative research
BARRY, L. C., KERNS, R. D., GUO, Z., DUONG, B. D., IANNONE, L. P. & REID, M. C. (2004) 'Identification of strategies used to cope with chronic pain in older persons receiving primary care from a Veterans Affairs Medical Center'. *Journal of the American Geriatrics Society,* 52, pp.950-956.	Entire sample was not chronic or recurrent LBP Self-management was not the focus Not qualitative research
BENJAMIN, B. E. (2006). 'The mystery of low-back pain, part III: treatment choices'. *Massage & Bodywork*, 21, pp.106.	Not qualitative research Self-management not a focus Focus is not patient or physiotherapist views
BETRISEY, D. (2009). 'Labor, social exclusion, and chronic muscular illness: the case of mid-impoverished sectors in a peripheral neighborhood in Madrid, Spain'. *Medical Anthropology*, 28, pp.65-80.	Entire sample was not chronic or recurrent low back pain
BLYTH, F. M., MARCH, L. M., NICHOLAS, M. K. & COUSINS, M. J. (2005). Self-management of chronic pain: a population-based study. *Pain*, 113, pp.285-292.	Entire sample was not chronic or recurrent low back pain Not qualitative research
BORK, H., MIDDELDORF, S. & LUDWIG, F. J. (2005). [Health education and health training with osteoarthritis]. *Zeitschrift Für Rheumatologie*, 64, pp.441-447.	Not written in English
BUCHBINDER, R. (2008). 'Self-management education en masse: effectiveness of the Back Pain: Don't Take It Lying Down mass media campaign'. *Medical Journal of Australia*, 189, pp.S29-S32	Not qualitative research
CLARKE, K. A. & IPHOFEN, R. (2007). Accepting pain management or seeking pain cure: an exploration of patients' attitudes to chronic pain. *Pain Management Nursing*, 8, pp.102-110.	The entire sample was not chronic or recurrent low back pain. Bladder, foot and pelvic pain were also included.
DAVIS, G. C. (1992). The meaning of pain management: a concept analysis. *Advances in Nursing Science*, 15, pp.77-86.	Not qualitative research
DE GOUMOENS, P., SCHIZAS, C. & SO, A.K.L.(2006)[Low Back Pain in 2006: Back to the root], *Revue medicale suisse,* 2(65), pp. 1268	Not written in English
DE VRIES, H. J., BROUWER, S., GROOTHOFF, J. W., GEERTZEN, J. H. B. & RENEMAN, M. F. (2011). Staying at work with chronic nonspecific musculoskeletal pain: a qualitative study of workers' experiences. *Bmc Musculoskeletal Disorders*, 12.	The entire sample was not chronic or recurrent low back pain. Neck/shoulder pain and fibromyalgia were also included.
DUGGAN, G.B. ET AL. (2013) Qualitative Evaluation of the SMART2 self-management system for people in chronic pain, *Disability and*	Chronic or recurrent low back pain was not solely population studied

Rehabilitation	
DYSVIK, E., KVALØY, J. T. & NATVIG, G. K. (2012). The effectiveness of an improved multidisciplinary pain management programme: a 6- and 12-month follow-up study. *Journal of Advanced Nursing*, 68, pp.1061-1072.	No detail if chronic or recurrent low back pain was the population included Self-management was not a major focus in the findings
FENWICK, C., CHABOYER, W. & ST JOHN, W. (2012). Decision-making processes for the self-management of persistent pain: A grounded theory study. *Contemporary Nurse*, 42, pp.53-66.	No detail if chronic or recurrent low back pain was the population included Self-management was not discussed in the findings or discussion
GONA, J.K., NEWTON, C.R., GEERE, J. Hartley S. (2013) 'Users' experiences of physiotherapy treatment in a semi-urban public hospital in Kenya' *Rural and Remote Health* 13	Population not chronic or recurrent low back pain
HALLBERG, I., EK, A., TOSS, G. & BACHRACH-LINDSTRÖM, M. (2010). 'A striving for independence: a qualitative study of women living with vertebral fracture'. *BMC Nursing*, 9, pp.1-30.	Vertebral fracture
HOWELL, S. L. (1994). Natural/alternative health care practices used by women with chronic pain: findings from a grounded theory research study. *Nurse Practitioner Forum,* 5, pp.98-105.	The entire sample was not chronic or recurrent low back pain.
HUBER, E. & SPIRIG, R. (2004). Living with pain -- elderly women as experts in the management on their chronic musculoskeletal pain [German]. *Pflege*, 17, pp.296-305.	Not written in English
HUGE, V., MULLER, E., BEYER, A., KRAFT, E. & AZAD, S. C. (2010). Patients with chronic pain syndromes. Impact of an individual outpatient therapy program on pain and health-related quality of life. *Schmerz*, 24, pp.459	Not written in English
JOHNSTON, M., FOSTER, M., SHENNAN, J., STARKEY, N. J. & JOHNSON, A. (2010). The Effectiveness of an Acceptance and Commitment Therapy Self-help Intervention for Chronic Pain. *Clinical Journal of Pain*, 26, pp.393-402.	Not qualitative research
JONES, S. E. (1993.) Effect of psychological processes on chronic pain. *British journal of nursing (Mark Allen Publishing)*, 2, pp.463	Not qualitative research
LANSBURY, G. (2000). Chronic pain management: a qualitative study of elderly people's preferred coping strategies and barriers to management. *Disability & Rehabilitation,* 22, pp. 2-14.	The entire sample was not chronic or recurrent low back pain
MAHOMED, R., PATTERSON, E. & JOHN, W. S. (2008). Factors Influencing Possible Participation in Chronic Disease Self-management Courses. *Australian Journal of Primary Health*, 14, pp.19-26.	The entire sample was not chronic or recurrent low back pain
MATTHIAS, M. S., BAIR, M. J., NYLAND, K. A., HUFFMAN, M. A., STUBBS, D. L., DAMUSH, T.	The entire sample was not chronic or recurrent low back

M. & KROENKE, K. (2010). Self-management support and communication from nurse care managers compared with primary care physicians: a focus group study of patients with chronic musculoskeletal pain. *Pain Management Nursing,* 11, pp.26-34.	pain
MATTHIAS, M. S., MIECH, E. J., MYERS, L. J., SARGENT, C. & BAIR, M. J. (2012). An Expanded View of Self-Management: Patients' Perceptions of Education and Support in an Intervention for Chronic Musculoskeletal Pain. *Pain Medicine*, 13, pp.1018-1028.	The entire sample was not chronic or recurrent low back pain. A range of chronic musculoskeletal conditions included
MATTHIAS, M. S., MIECH, E. J., MYERS, L. J., SARGENT, C. & BAIR, M. J. (2012). "There's More to This Pain Than Just Pain": How Patients' Understanding of Pain Evolved During a Randomized Controlled Trial for Chronic Pain. *Journal of Pain,* 13, pp.571-578.	The entire sample was not chronic or recurrent low back pain Not qualitative research
MOORE, S.K., GUARINO, H., ACOSTA, M.C., ARONSON, I.D, MARSCH, L.A., ROSENBLUM, A., GRABINSKI, M.J. & TURK, D.C. (2013) Patients as Collaborators: Using Focus Groups and Feedback sessions to Develop an Interactive, Web Based Self-Management Intervention for Chronic Pain, *Pain Medicine*, 14(11), pp. 1730-1740.	Chronic pain with no further detail given. Focus was opioid use
O'Hagan, F. T., M. F. Coutu, and R. Baril. (2013) "A case of mistaken identity? The role of injury representations in chronic musculoskeletal pain." *Disability & Rehabilitation* 35.18 pp.1552-1563.	Not stated population included
NILSEN, G. & ANDERSSEN, N. (2013). Struggling for a normal life: work as an individual self-care management strategy among persons living with non malignant chronic pain. *Work*	Population not solely people with chronic or recurrent low back pain
ROBERTO, K. A. & REYNOLDS, S. G. (2002). Older women's experiences with chronic pain: daily challenges and self-care practices. *Journal of Women & Aging*, 14, pp.5-23.	Population not solely people with chronic or recurrent low back pain. A range of chronic musculoskeletal pain conditions.
ROGERS, A. & ALLISON, T. (2004). What if my back breaks? Making sense of musculoskeletal pain among South Asian and African- Caribbean people in the North West of England. *Journal of Psychosomatic Research*, 57, pp.79-87.	Widespread musculoskeletal pain, not detail given.
ROSS, M. M., CARSWELL, A., HING, M., HOLLINGWORTH, G. & DALZIEL, W. B. (2001). Seniors' decision making about pain management. *Journal of Advanced Nursing*, 35, pp.442-451.	The entire sample was not chronic or recurrent low back pain
SCHULZ, P. J., RUBINELL, S. & HARTUNG, U. 2007. An internet-based approach to enhance self-management of chronic low back pain in the italian-speaking population of Switzerland: results from a pilot study. *International Journal of*	Not qualitative research

Public Health, 52, 286-294.	
SCHULZ, P. J., RUBINELLI, S., MARIOTTI, G. & KELLER, N. (2009). Meeting the ranging of informational needs of chronic low back pain sufferers: Conceptual design and rationale of the interactive website ONESELF. *Disability and Rehabilitation*, 31, pp.2118-2124	Not qualitative research
SKULADOTTIR, H. & HALLDORSDOTTIR, S. (2011). The quest for well-being: self-identified needs of women in chronic pain. *Scandinavian Journal of Caring Sciences*, 25, pp.81-91.	The entire sample was not chronic or recurrent low back pain Self management not a focus
SOFAER-BENNETT, B., HOLLOWAY, I., MOORE, A., LAMBERTY, J., THORP, T. & O'DWYER, J. (2007). Perseverance by older people in their management of chronic pain: A qualitative study*.* *Pain Medicine*, 8, pp.271-280.	The entire sample was not chronic or recurrent low back pain
SOKUNBI, O., CROSS, V., WATT, P. & MOORE, A. (2010). Experiences of individuals with chronic low back pain during and after their participation in a spinal stabilisation exercise programme -- a pilot qualitative study. *Manual Therapy*, 15, pp.179-184.	Minimal focus on self-management
TAYLOR, B. (2001). Promoting self-help strategies by sharing the lived experience of arthritis. Contemporary Nurse: *A Journal for the Australian Nursing Profession*, 10, pp.117-125.	The entire sample was not chronic or recurrent low back pain. Only stated ‘arthritis’
VALLERAND, A. & NOWAK, L. (2009). Chronic opioid therapy for nonmalignant pain: the patient's perspective. Part I--life before and after opioid therapy. *Pain Management Nursing,* 10, pp.165-172.	The entire sample was not chronic or recurrent low back pain. ‘Chronic non malignant pain’ stated.

Appendix 3: Study 2A physiotherapist participant information sheet for focus groups

Participant Information Sheet and Invitation for Musculoskeletal Physiotherapists.

Title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate physiotherapists to support self-management of people with low back pain.

Investigators: Jenni Monaghan, Professor Nicola Adams and Dr Derek Jones.

Jenni Monaghan will design and carry out the interviews. Professor Nicola Adams and Dr Derek Jones are Jenni Monaghan's supervisors.

Invitation Paragraph

You are being invited to take part in a research study, which forms part of Jenni Monaghan's doctoral studies. Before you decide to take part, it is important for you to understand why the research is being done and what it will entail. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, don't hesitate to ask. Take time on your decision on whether or not you wish to take part. Thank you for reading this.

Background

Low back pain is a common cause of pain, which can last for varying amounts of time and affect people in different ways. We are trying to find out your experiences of working with patients with chronic or recurrent low back pain and facilitating self-management. An educational programme is going to be developed for physiotherapists following interviews.

What does the study involve?

The study involves you to be involved in a focus group with other physiotherapists The results generated from interviews will be contribute to the development of an educational programme, which you will be invited to take part in.

Why have you been chosen?

You have been chosen because you are a musculoskeletal physiotherapist at

Do you have to take part?

It is up to you to decide whether or not to take part. It will not have any effect on your job role.

How will the interview data be collected?

The focus groups will be digitally recorded.

What are the side effects of any treatment or procedure?
There is no treatment or procedure being offered as part of this research study.

What if something goes wrong?
If you have any concerns before, during or after the interview, you should contact the investigator whose contact details are given below.

Will my taking part in the study be kept confidential?
Yes. Your responses during the interview will not be kept with your personal details. The answers you give to questions may be quoted within the research, however they will not be linked back to you.

What would happen if I agree and then change my mind?
You can change your mind and withdraw from the study at any point. If you wish to do this please contact Jenni Monaghan whose contact details are given below.

What will happen to the results of the research study?
A summary paper of the results will be available on the Northumbria University Website. The results may be published in a reputable scientific and/or medical journal and may be presented at a clinical conference to medical staff.

Who is organising and funding the research?
The School of Health, Community and Education studies at Northumbria University, Newcastle Upon Tyne are funding the research.

Appendix 4: Study 2A physiotherapist consent form

Consent form

Study title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate physiotherapists to support self-management of people with low back pain.

Investigators: Jenni Monaghan, Professor Nicola Adams and Dr Derek Jones.

	Please initial box
I have read and understand the purpose of the study and understand the information sheet dated 29/03/2012 version 1 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
I am willing to be interviewed	☐
I am happy for my comments to be audio-recorded	☐
I understand that I can withdraw at any time without giving any reason, without my medical care or legal rights being affected	☐
I know that my name and details will be kept confidential and will not appear in any printed documents	☐
I am willing for the possible use of my quotations in publications, which I understand will not be linked back to me	☐
I agree to take part in the above study	☐

______________	______________	______________
Name of participant	Date	Signature
______________	______________	______________
Name of person taking consent	Date	Signature

Appendix 5: Study 2B participant information sheet

Participant Information Sheet for Participants aged 18 and over.

Title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate physiotherapists to support self-management of people with low back pain.

Investigators: Jenni Monaghan, Professor Nicola Adams and Dr Derek Jones.

Jenni Monaghan will design and carry out the interviews. Professor Nicola Adams and Dr Derek Jones are Jenni Monaghan's supervisors.

Invitation Paragraph

You are being invited to take part in a research study, which forms part of Jenni Monaghan's doctoral studies. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will entail. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please do not hesitate to ask. Thank you for reading this.

Background

Low back pain is a common cause of pain, which can last for varying amounts of time and affect people in different ways. We are trying to find out how back pain has affected you and the impact of physiotherapy for this. In order to do this we are asking people aged 18 years and over to participate in one to one interviews with Jenni Monaghan.

What does the study involve?

The study involves you to be interviewed by Jenni Monaghan at This will be your only involvement with the study. The results generated from interviews will contribute to the development of an educational programme for physiotherapists, which will aim to assist them to more effectively support people to manage their low back pain.

Why have you been invited?

You have been invited because you are over 18 years of age and have received physiotherapy for low back pain in the past six months at

Do you have to take part?

It is up to you to decide whether or not to take part. It will not have any effect on the care that you receive from physiotherapy or any other healthcare service.

How will the interview data be collected and stored?

The interview will be audio recorded. Access to the information gathered will be limited to the study staff and investigators and any relevant regulatory authorities. Computer held data including the study database will be held securely and password protected on a dedicated web server. No-one else will be able to gain access to this information.

Expenses and payments

You will be reimbursed for any travel expenses you incur if travelling specifically to take part in the interview.

What do I have to do?
Fill in the enclosed reply slip on the invitation letter and return it in the pre paid envelope. We will then contact you to arrange a suitable interview time.

What are the side effects of any treatment or procedure?
There is no treatment or procedure being offered as part of this research study.

What if something goes wrong?
If you have any concerns about the study, you should contact either Jenni Monaghan or Professor Nicola Adams whose contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally you can do this by contacting Patient Experience Team.

Will my taking part in the study be kept confidential?
Yes. Your responses during the interview will not be kept with your personal details. The responses from the interview will be given a code; the only information being kept alongside these will be your age, sex and duration of low back pain symptoms. The answers you give to questions may be quoted within a publication of the research study, however they will not be linked back to you. **No personal information will be passed on to any medical professionals from the interviews.**

In compliance with the ICH/GCP guidelines, Professor Nicola Adams will maintain all records and documents regarding the conduct of the study. These will be retained for at least 7 years or for longer if required. If the responsible investigator is no longer able to maintain the study records, a second person will be nominated to take over this responsibility.

The study documents held by the Professor Nicola Adams on behalf of the Northumbria University shall be finally archived at secure archive facilities at the University of Northumbria. This archive shall include all study databases and associated meta-data encryption codes.

What would happen if I agree and then change my mind?
You can change your mind and withdraw from the study at any point. If you wish to does this please contact Jenni Monaghan or Professor Nicola Adams whose contact details are given below.

What will happen to the results of the research study?
A summary paper of the results will be available on the Northumbria University website. The results may be published in a reputable scientific and/or medical journal and may be presented at a clinical conference to medical staff.

Who is organising and funding the research?
The School of Health, Community and Education studies at Northumbria University, Newcastle upon Tyne are funding the research.

Appendix 6: Study 2B invitation letter

Participant Invitation Letter

Dear Patient,

You are being invited to take part in a research study, which forms part of a doctoral research study. You have been chosen because you are over 18 years of age and have received physiotherapy for low back pain in the past six months at

The aim of the study is to explore your views and experiences of living with low back pain and your views regarding physiotherapy for low back pain. An information sheet is included with this letter which details information about the study. If you wish to be considered for the study please could you return this letter with your details completed below in the enclosed stamped addressed envelope. When we receive your letter we will contact you by telephone to arrange an appropriate time for interview.

Thank you for reading this.

Yours faithfully,

Administrator
Tel:

If you wish, you may contact the researcher (details are also on the enclosed information sheet)

Jenni Monaghan
PhD Student
Telephone:

I give consent to be contacted by telephone to arrange an interview date.

Signed: ………………………………………………………………………

Print name: ……………………………………………………………………..

Date:……………………………………………………………………………..

Contact number: ……………………………………………………………..

Appendix 7: Study 2B consent form

Consent form

Study title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate physiotherapists to support self-management of people with low back pain.

Investigators: Jenni Monaghan, Professor Nicola Adams and Dr Derek Jones.

	Please initial box
I have read and understand the purpose of the study and understand the information sheet dated 27/05/2012 version 2 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
I am willing to be interviewed	☐
I am happy for my comments to be audio-recorded	☐
I understand that I can withdraw at any time without giving any reason, without my medical care or legal rights being affected	☐
I know that my name and details will be kept confidential and will not appear in any printed documents	☐
I am willing for the possible use of my quotations in publications, which I understand will not be linked back to me	☐
I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from regulatory authorities and/or from the Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records	☐
I agree to take part in the above study	☐

Name of patient	Date	Signature
Name of person taking consent	Date	Signature

Appendix 8: Study 3 participant information sheet

Participant Information Sheet and Invitation for Musculoskeletal Physiotherapists.

Title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate physiotherapists to support self-management of people with low back pain.

Investigators: Jenni Monaghan, Professor Nicola Adams and Dr Derek Jones.

Jenni Monaghan will design and carry out the interviews and educational programme to be discussed. Professor Nicola Adams and Dr Derek Jones are Jenni Monaghan's supervisors.

Invitation Paragraph

You are being invited to take part in a research study, which forms part of Jenni Monaghan's doctoral studies. Before you decide to take part, it is important for you to understand why the research is being done and what it will entail. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, don't hesitate to ask. Take time on your decision on whether or not you wish to take part. Thank you for reading this.

Background

Low back pain is a common cause of pain, which can last for varying amounts of time and affect people in different ways. We are trying to find out your experiences of working with patients with chronic or recurrent low back pain and facilitating self-management. An educational programme is going to be developed for Physiotherapists with the aim to advance skills in facilitating self-management of low back pain.

What does the study involve?

You are invited to take part in an educational programme regarding self-management of low back pain. Following the education programme, a selection of physiotherapists will be invited to take part in a focus group regarding the education programme. Before and after the education programme you will also be required to fill out some outcome measures.

Why have you been chosen?

You have been chosen because you are a musculoskeletal physiotherapist at

Do you have to take part?

It is up to you to decide whether or not to take part. It will not have any effect on your job role.

What do I have to do?
Contact Jenni Monaghan on the email or phone number provided if you would like to participate in the study.

How will the interview data be collected?
The focus groups will be tape recorded. The focus group will be with a selection of the physiotherapists who have participated in the education programme.

What are the side effects of any treatment or procedure?
There is no treatment or procedure being offered as part of this research study.

What if something goes wrong?
If you have any concerns before, during or after the programme or interview, you should contact the investigator whose contact details are given below.

Will my taking part in the study be kept confidential?
Yes. Your responses during the interview will not be kept with your personal details. The answers you give to questions may be quoted within the research, however they will not be linked back to you.

What would happen if I agree and then change my mind?
You can change your mind and withdraw from the study at any point. If you wish to do this please contact Jenni Monaghan whose contact details are given below.

What will happen to the results of the research study?
A summary paper of the results will be available on the Northumbria University Website. The results may be published in a reputable scientific and/or medical journal and may be presented at a clinical conference to medical staff.

Who is organising and funding the research?
The School of Health, Community and Education studies at Northumbria University, Newcastle Upon Tyne are funding the research.

Appendix 9: Study 3 physiotherapist consent form

Consent form

Study title: Patient and physiotherapist experiences of self-management of low back pain and the role of an educational programme to facilitate Physiotherapists to support self-management of people with low back pain.

Aim of participant interviews: To explore your views and experiences of physiotherapy treatment of low back pain and self-management following an educational intervention.

Study purpose: The results generated from interviews will generate an understanding of the feasibility of physiotherapist education and outcomes of this.

Please initial box

I have read and understand the purpose of the study and understand the information sheet dated 22/2/2013 version 2 for the above study. ☐

I have had the chance to ask questions about the study and these have been answered to my satisfaction ☐

I am willing to be interviewed once after the intervention ☐

I am happy for my comments to be audio-recorded ☐

I am willing to take part in the educational programme ☐

I understand that I can withdraw at any time if I change my mind and this will not affect my job role ☐

I know that my name and details will be kept confidential and will not appear in any printed documents ☐

____________________	____________________	____________________
Name of participant	Date	Signature
____________________	____________________	____________________
Name of person taking consent	Date	Signature