

**The Lived Experience of
Pregnancy-Related Lumbopelvic Pain,
Therapeutic Contributions of Osteopathic care**

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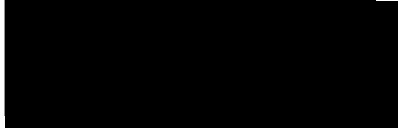
**A thesis submitted in partial fulfilment of the requirements
of Swansea University for the degree of Doctor of
Philosophy**

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Declarations

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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This thesis is the result of my own investigations, except where otherwise stated.

Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

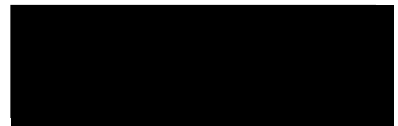
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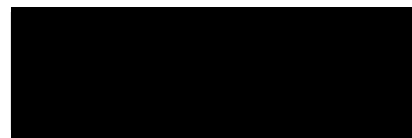
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Abstract

This thesis reports the findings and analysis of three linked studies which explore the nature of the lived experience of pregnancy related lumbopelvic pain and how osteopathic care impacted this condition. Initially, an Interpretive phenomenological analysis explored the lived experience of the condition and how receiving osteopathic care influenced this in a population of six pregnant individuals. Findings demonstrated that pregnancy related lumbopelvic pain was experienced across a range of life domains which included significant disruption to life, physical disability, and withdrawal from social and family life. This experience was characterised by psychological distress, negative self-appraisal, and reduced coping. This study demonstrated that receiving osteopathic care provided physical relief which appeared to interact with psychological aspects of treatment such as education and reassurance, increased coping, and improvements in the patients' mood.

To better understand these relationships, a second study was conducted with 3 groups of UK osteopaths. This study explored via thematic analysis, how osteopaths established the therapeutic alliance in their management of PR-LP. Findings showed that osteopaths established and made sense of their therapeutic management of pregnancy-related lumbopelvic pain across five main domains which were linked to clinical autonomy and professional identity, communication and reassurance, patient education, and a considered self-reflection of how their patients experienced their pain and its impact on their lives. Within this, complex aspects of care were highlighted such as how therapeutic touch interacted with communication and advice.

A third and final study was conducted. This involved the drafting of a preliminary clinical toolkit, based on the findings of the first and second studies and a further focus group of UK osteopaths, explored the validity of these findings. Findings and analysis of this final study demonstrated generally strong concordance with the findings of the two preceding studies.

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List of Abbreviations

ACT	Acceptance and Commitment Therapy
ACT	Academic clinicians
ADLs	Activities of daily life
APA	American Psychological Association
BATD	Behavioural Activation Therapy
BMA	British Medical Association
BPS	biopsychosocial
CAM	Complementary and alternative medicine
CBT	Cognitive behavioural therapy
Ces	Contextual effects
CHHS	College of Human and Health Sciences
CHLC	Health as under control of chance
EBM	Evidence-based medicine
EC	Early career group
EQ	EuroQuol questionnaires
EXP	Experienced group
FA	Fear avoidance
GOSC	General Osteopathic Council
GPS	general practitioners
GT	Grounded Theory
HADS	Hospital Anxiety Depression Scale
HLC	Health locus of control
HrQOL	Health-related quality of life
HWBA	Swansea University Health and Wellbeing Academy
IHLC	Internal health locus of control
IPA	Interpretative phenomenological analysis
IVD	Intervertebral disc
LBP	Low back pain
MSK	Musculoskeletal
NBM	Narrative-based medicine
NHS	National Health Service
NICE	National Institute for Clinical Excellence
OC	Osteopathic care
OCF	Osteopathy in the Cranial field
OEIs	Osteopathic educational institutions
OPCS	Office of Population Censuses and Surveys
OPFs	Osteopathic palpatory findings
OPS	Osteopathic Practice Standards
PCC	Patient centred care
PGP	pelvic girdle pain
PHLC	Under control of powerful others
PND	Post-natal depression

PR-LP	Pregnancy related lumbo-pelvic pain
QDS	Quebec Disability Scale
QOL	Quality of life
QST	Quantitative Sensory Testing
RCTS	Randomised controlled trials
RMDQ	Roland Morris Disability Questionnaire
RMQS	Roland Morris questionnaires
SCEs	Self conscious emotions
TA	Therapeutic Alliance
VAS	Visual Analogue Scales
YLDS	Years lost due to disability

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Chapter 1: Introduction

1.1 Background to the study

Low back pain (LBP) represents a major healthcare problem globally. With a significant expansion within developed industrialised nations, the scale of the clinical problem now exhibits epidemic proportions (Health and Medicine Week, 2023; Hoy et al., 2010; Khan et al., 2020; Maniadakis & Gray, 2000). LBP is not typically a life-threatening condition; however, a significant correlation between the condition and comorbidities which have detrimental effects on quality of life have been demonstrated in the extant literature (Murray, 2013).

Until recently, the condition had been relatively under prioritised and subsequently underfunded, likely since it does not lead to fatal outcomes. However, previous work on the global burden of disease of LBP has illustrated that the years of healthy life lost due to the condition are significant, with a global impact which exceeds even that of cardiovascular disease (Hoy et al., 2014). Significant economic loss accompanies LBP and with reported point prevalence rates ranging from 12% to 35% (Maniadakis & Grey, 2000) as well as lifetime prevalence rates ranging from 49-80%, it is easy to understand that LBP is a leading cause of healthcare usage, disability, and loss of workdays (Freburger et al., 2009). Multiple studies which examine prevalence rates of LBP indicate that more than 80% of individuals will experience an episode of LBP during their lifetime; and with the percentage of subsequent LBP episodes ranging from 20% to 44% within 1 year for individuals in employment, and lifetime recurrence rates of as great as 85%. (Van Tulder et al., 2002). Reports indicate approximately 95% of individuals who experience LBP usually suffer from a short-lived episode which remits within a few months of the initial onset (Carey et al., 1995). However, cohort studies have demonstrated that approximately one third of patients with LBP are not fully recovered after one year (Costa et al., 2009) and the persistence and reoccurrence of LBP has been demonstrated by large scale epidemiological studies (Cassidy et al., 2005). Further work has also demonstrated that amongst the subset of patients who have not recovered from LBP by 3 months, 60% still were suffering from persistent pain at 1 year after the onset of LBP (Hestbaek et al., 2003). More recently, in a large study which investigated the years lost due to disability (YLDs), LBP has been shown across 204 countries LBP has been shown to remain a significant clinical problem facing healthcare infrastructure, populations and economies worldwide. This has occurred to the extent that the number of prevalent cases, incident cases and YLDs related to LBP have substantially increased across the globe from 1990 to 2019. This impact has been seen to fluctuate across different countries with high-income areas such as the USA, Denmark and Switzerland showing the greatest prevalence. (Chen et al., 2020). Most recently, research which utilised GP consulting information from large databases in the UK demonstrated that LBP has remained consistently high in the UK from the period covering 2009-2019 (Yu et al., 2022).

Whilst most LBP will self-limit, the widespread prevalence of the condition still leaves a vast number of sufferers who go on to experience persistent LBP. Populations of LBP sufferers, who do not experience relief within a relatively short time span, have been shown to contribute most significantly, though not exclusively, to the health economic cost of prescription medications and visits to primary care services such as general practitioners (GPs) and physiotherapists (IJzelenberg & Burdorf, 2004). Additionally, the subsequent health economic impact of LBP is compounded by a global rising prevalence. In the UK alone, LBP-related disability rose by 104% between 1986 and 1992. By comparison, disability due to causes other than back pain rose by 60% during this period (Moffet et al., 1990). This pattern is mirrored in other developed nations with increases in spinal surgery, opioid use and visits to physical therapists increasing substantially in the USA (Von Korff et al., 2007). Significant impact on social and recreational activities due to LBP has also been well established, and a lack of engagement in these key areas of living is robustly associated with poorer psychological outcomes (Office of Population Censuses and Surveys [OPCS], 1997; Walsh et al., 1992).

Further to the health economic impact of LBP, the condition naturally produces high costs on social care and working days lost due to disability. Interestingly, a number of studies demonstrate that perceived disability due to back pain, rather than the actual severity of the pain is predictive of lost workdays and an optimal engagement in the activities of daily life (ADLs) (Hayden et al., 2010). Women and patients with a previous history of low back pain are more likely to seek care (Deyo et al., 1998). Predictors of care-seeking have been identified as illness beliefs and psychological distress (Balagué et al., 2012). Furthermore, it is understood that higher levels of psychological distress and low mood are implicated in sufferers seeking care for LBP (Pincus et al., 2002). Clearly, to identify areas of therapeutic focus in LBP there is a need for further work which explores causal factors which determine the etiological development and drive the progression of the condition.

1.2 Categorising LBP

Whilst most LBP is rarely life threatening, a small subset of patients experience LBP as a symptom of organic and often serious disease. Several different aetiologies are attributable to LBP, such as pain arising from bony cancer in the spine, aortic aneurysmal disease and pathological fracture caused by trauma, osteoporosis, or cancer (Koes et al., 2001). Conversely, a wide range of benign aetiologies have been identified within the paradigm of “mechanical LBP” which, within the field of musculoskeletal medicine offer putative therapeutic targets. Intervertebral discs (Burke et al., 2002) spinal nerve roots (Kulisch et al., 1991), ligaments (Cholewicki & McGill, 1996) and spinal facet joints (Yang & King, 1984) have all been cited as important sites where LBP may originate from and, as such, management in the

form of adjuvant procedures such as steroid injection, minor surgery, acupuncture , exercise based therapy and manual therapy protocols have been developed within rational therapeutic principles with varying success (Savigny et al., 2009). The allopathic management of LBP in modern healthcare has therefore been based upon reducing painful sensations from anatomical structures, or specific “tissues” which are deemed to be the cause of the pain experience. (Cashin et al., 2021).

Despite the range of interventions which have been developed over the last century towards the resolution of LBP, the condition remains a diagnostic enigma which often confounds conventional management. Deyo et al. (1998) report that less than 15% of LBP sufferers who seek primary care for their condition present with either serious pathology or mechanical dysfunction which can be demonstrated as being causative of their LBP. The issue has been further complicated by questionable construct validity of impairment-related outcomes of LBP which have historically been useful diagnostic indicators of dysfunction. For example, spinal stiffness, as demonstrated by range of motion (ROM) characteristics, specific capability at normal activity, palpable muscular tension and the precise anatomical location of LBP (as indicated by the patient) are to this day well established within the professional training and communities of practice of medicine and manual therapy. Despite numerous empirical studies which demonstrate that these characteristics are not well correlated with either the level of pain intensity and related disability as well as results of diagnostic imaging, these constricts prevail (Lederman, 2011). More recently, attempts to reconcile the causative and maintaining factors of LBP with feasible management strategies have investigated behavioural aspects of the experience of LBP which has increased, in part, the understanding of psychologically based treatments for LBP, such as cognitive behavioural therapy (CBT) (Hoffman et al., 2007).

The lack of understanding as to what causes LBP has caused much debate amongst the medical profession and a unifying theory as to its development remains elusive. The majority of LBP which presents in primary care is not due to serious medical disease and, without an obvious mechanical or physical lesion, is currently categorised as non-specific low back pain (NSLBP) (Balagué et al., 2012). In a condition where no specific diagnostic criteria have been established, the challenge to understanding what constitutes best clinical practice is considerable. In the search for causative factors, attention has been focused on aspects of physical conditioning and LBP. Back pain is by nature a “physical” problem, reliably aggravated by physical activity. The position, therefore, that LBP is a failure of structure or consequence of impaired function is a rational concept. However, despite considerable research in the effort to find a mechanical cause, a robust patho-anatomic theory has not been adequately demonstrated. Prominently, several studies have investigated the relationship between LBP and intervertebral disc (IVD) degeneration and whilst the results are encouraging, systematic review and meta-analysis demonstrate that the diagnostic findings of magnetic resonance imaging (MRI), which

identify IVD lesions, are highly prevalent in non-symptomatic populations and do not correspond well with surgical management directed towards individual lesions (Cheung et al., 2009). Additionally, despite the role which anatomical strain may have in the aetiology of LBP, research has highlighted the unlikelihood of an activity-dependent causation. Indeed, Wai et al. (2009) found that bending and twisting alone were unlikely to be causative of LBP. Similar conclusions have been made for occupational physical strain as well as standing and walking (Roffey et al., 2010). In addition to this, the relationships between manual handling or assisting patients, bending, carrying, and lifting as being causative of LBP are poor (Kwon et al., 2011).

Obesity and physical de-conditioning have also received considerable enquiry within the area of LBP. This results from the position that increased body weight will mechanically load the spinal structures and accelerate degenerative changes. This pathological relationship is well demonstrated in other conditions such as lower limb Osteoarthritis (OA) (Messier, 1994). With regard to LBP however, despite encouraging evidence which demonstrates an increased risk of developing LBP in obese subjects (Shiri et al., 2010), cohort studies have shown that obesity is only associated with increased incidence of low back pain for a day or more in the previous 12 months (OR 1.53, 95% CI 1.22–1.92) (Balagué et al., 2012). Given numerous other physical and psychological comorbidities which are associated with obesity (Dixon, 2010), it is likely that these may be contributing to the overall clinical picture: however, this relationship has yet to be fully explored. Further investigation into overall physical health and LBP has also demonstrated that physical deconditioning is inconsistently associated with LBP (Bousema et al., 1998). Despite this, specific interest in physical performance and LBP is a dominant focus in the professional training of practitioners such as GPs, physiotherapists and osteopaths who manage LBP in primary care (Lederman, 2011).

1.3 Psychological Aspects of the Pain Experience

Only a small minority, in the region of 10-15%, of LBP sufferers go on to develop chronic pain. However, given lifetime prevalence rates this figure is still considerable and as discussed, represents a significant global burden of disease which is increasing (Hoy et al., 2014). The contributing factors to the development of LBP have, over the last 3 decades seen much investigation and in lieu of a robustly demonstrated physical aetiology, the perspective has been expanded to the psychological aspects of the experience of LBP itself.

Chronic pain, also referred to as persistent pain, has been widely recognised as pain that persists past normal healing time and is therefore no longer associated with the initial painful stimulus or injury. Usually, pain is regarded as chronic or persistent when it lasts or recurs for more than 3 to 6 months (Rolf-Detlef et al., 2015). However, this timeframe which has significant acceptance currently within

the scientific community, could be considered largely arbitrary given the multifactorial and individual nature of a given person's pain experience (Turk & Okifuji, 2001). This is due to the context within how pain affects the individual, given that the physiological changes which are associated with this type of pain may occur in individuals at dramatically different rates (Diatchenko et al., 2004). Furthermore, LBP, in particular, influences disability and quality of life within a time frame much shorter than these proposed cut-off points. Indeed, using Visual Analogue Scales (VAS), Roland Morris questionnaires (RMQS) and EuroQuol questionnaires (EQ) in a population of 366 low back pain sufferers, Kovacs et al. (2005) report that disability was predicted by pain duration whereas quality of life was predicted by disability but not pain severity. The authors also found that changes related to the determinants of disability and quality of life appear after 14 days.

It is generally accepted that patients' beliefs about their pain can have significant predictive effects on illness behaviour. These behavioural characteristics have been shown to influence progression to pain chronicity as well as having widespread effects on emotional wellbeing (McCracken & Velleman, 2010), tissue health (Waddell et al., 1993) and disability (Bortz, 1984). A conceptual basis that has emerged over the last 30 years to explain the interrelatedness of these aspects of the pain experience is the fear avoidance (FA) model (Lethem et al., 1983). This model proposes that a normal activity, under the influence of psychological distress, receives a negative meaning via classical conditioning, be associated with fear, anxiety, increased muscle activity and avoidance from the inciting activity. In relation to this, Vlaeyen and Linton (2000) postulated that pain-related fear drives escape and avoidance behaviours which reduce engagement with daily activities which are expected to produce pain. The avoidance of daily activities then leads to progressive physical disability and withdrawal from positive reinforcers which in turn lead to mood disturbances such as irritability, depression, and feelings of frustration.

Emotional disturbances such as these have been seen to impact pain persistence and drive the establishment of behaviours which prevent healthy resolution of the patient's problem. Woby et al, (2004) highlight that pain-related fear and anxiety about the experience of pain can lead to over-prediction of pain and hypervigilant responses which cause the sufferer to avoid activity which is central to healthy recovery. Further behavioural responses which emerge from the fear-avoidant model include catastrophising, whereby sufferers experience extreme negative appraisals regarding their pain. This then results in cognitive interpretations of pain as extremely threatening. This in turn drives further hypervigilance and progressive disuse and disability (Crombez et al., 1999). Catastrophising has been demonstrated to be related to several specific outcomes in the management of low back pain such as response to physical and psychological treatment (Smeets et al., 2006)

Relatively recent work has highlighted the biopsychosocial impact of patients' experience of LBP and, as a result, has drawn on the psychological literature to define predictors of the development of persistence in LBP. These indicators, known as "yellow flags", are psychosocial aspects of the patient's history and life experience which are considered to have an impact on long term disease outcomes and also clinical assessment and management (Nicholas et al., 2011). This has stemmed from an increasing incorporation of the biopsychosocial (BPS) model in modern healthcare. This model, proposed by Engel (1981) suggests that an individual's health may be impacted by aspects of their psychological, social, as well as physical wellbeing. Factors such as a tendency to low mood, social or financial problems, and negative appraisals that pain may be damaging and disabling, have been established as significant (Waddell et al., 1993). In the clinical implementation of yellow flags, it may be prudent, however, to consider that these psychosocial aspects may be considerably increased by the long-term nature of the pain itself, and management should subsequently be directed at strategies which allow the patient to regain control over these aspects and reappraise their pain in a more positive context. Consistent with the previously established model of fear avoidance and the impact that this model has on the pain experience, one of the aspects identified in the yellow flag model is a tendency towards fear avoidant behaviour and reduced activity levels. This is interesting in that prior to these constructs gaining acceptance in the management of LBP, patients were routinely prescribed prolonged bedrest by their GPs. This is now known to contribute to poorer clinical outcomes, lower self-efficacy and adverse effects on the physical tissues of the low back itself (Deyo et al., 1986).

Increasing awareness of psychosocial factors in persistent LBP, interest has resulted in psychological interventions such as cognitive behavioural therapy (CBT) being used to treat the condition. CBT aims to alter patients' cognitive responses to their pain and allow them to engage in active rehabilitation and has been incorporated into multidisciplinary treatment programmes for LBP (Tota-Faucette et al., 1995). This approach to the management of LBP, and musculoskeletal pain in general, is based on the premise that by reducing negative thoughts and feelings about pain, which reduce activity, and prevent recovery, patients can willingly engage in activities which have beneficial effects on reducing the level of physical disability (Moseley, 2004). In support of this, earlier work has demonstrated that increased physical performance following rehabilitation programmes, which combined psychological and interventions with physical therapy, observed a link between cognitive and physical change after a cognitive and physical program (McCracken & Gross, 1998). In addition to CBT a more recent development known as Acceptance and Commitment Therapy (ACT) has gained popularity and continues to achieve empirical support for a range of persistent pain conditions. This therapy is broadly considered to build on and develop the principles of CBT to allow sufferers to "accept" physical, psychological and social aspects of their condition, whilst developing strategies of continued

engagement with beneficial activity and thought patterns in the face of adversity which lead to improvements in perceived health, and clinical outcomes (Hayes et al., 2006). Recently, ACT has been combined with standard physical therapy protocols with promising preliminary results: however, initial results highlight issues of implementation of these combined approaches (Godfrey et al., 2020)

Further to this, as the intervention is complex and dependent on multifactorial aspects of therapist and patient interaction, clinical outcomes can be variable. For example, a previous systematic review of eleven ACT-based trials (Hughes et al., 2017) highlighted that ACT was significantly more effective in the management of persistent pain than controls (no alternative intervention or treatment as usual) across a range of pain-related psychological distress and functional capacity outcomes. However, measures of pain intensity and quality of life were not found to be significantly different than controls. Indeed, and perhaps unsurprisingly, the most significant changes occurred in relation to pain acceptance which is known to be a key process of ACT (Hughes et al., 2017).

Specific to LBP however, psychological approaches such as CBT and ACT have shown positive benefits which help patients with pain intensity as well as pain-related cognitions. Recent work highlights that ACT and a related form of CBT known as Behavioural Activation Therapy (BATD) improved pain levels and related psychological distress as well as the level to which pain interfered with daily life (Sanabria-Mazo et al., 2023). The authors report that these symptoms were significantly improved when compared to GP-led treatment as usual, which was comprised of a range of pain medications, anti-depressive medications or recommendations for aerobic exercise. However, unlike the findings of the previous review (Hughes et al., 2017) no impact of ACT or BATD was demonstrated on comorbid depression or anxiety.

A more recent three-level meta-analysis and a trial sequential analysis of randomized controlled trials (Lai et al., 2023) of the effects of ACT-based interventions in persistent pain highlighted that the type of the condition and the context in which therapy occurs may impact clinical outcomes. For example, Lai et al. (2023) reviewed thirty-three trials and reported that face-to-face ACT provided significantly larger effects on physical outcomes than internet-delivered ACT. Additionally, Participants with chronic headache and fibromyalgia showed greater benefit from ACT compared to those with non-specific pain such as LBP.

Clearly, significant benefits can be provided to persistent pain patients via psychological therapies such as CBT and ACT. However, regarding the development of future interventions which could prove efficacious in the management of LBP, further considerations of the psychological aspects of the sufferers' specific pain experience must be integrated within these modern pain management programmes.

1.4 Pregnancy related Lumbopelvic pain

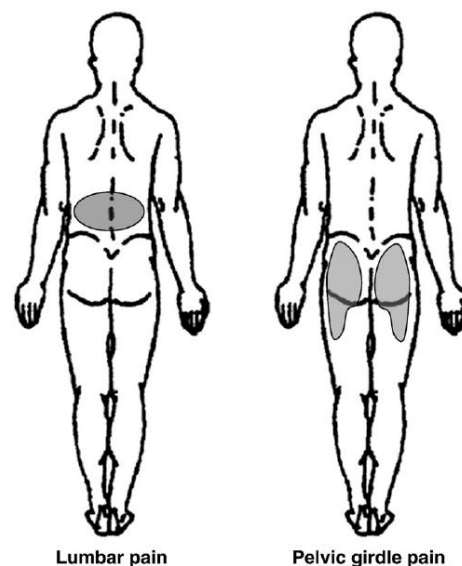
LBP is commonly encountered during pregnancy and represents a significant proportion of visits to medical professionals in the UK and across different cultures (Wang et al., 2004). Pain experienced during pregnancy carries a significant negative impact on pregnant individuals' ability to work, sleep and carry out activities of daily life during their pregnancy (Licciardone et al., 2010). In addition to this, LBP during this time has significant and deleterious effects on anxiety and stress (Olsson & Nilsson-Wikmar, 2004). Psychological stress and the state of being anxious during pregnancy also has related effects on physiological functioning and women's ability to modulate pain (Alder et al., 2007).

The consequences of LBP during pregnancy have been shown to persist long into the postnatal period in approximately 25% of women. The prevalence of LBP in pregnancy ranges from 24% to 90%, although it is mostly estimated at 40%-50 and is predictive of further episodes of LBP post-partum and at future pregnancies (Wu et al., 2004) and LBP during future pregnancies (Noren et al., 2002). The significant socioeconomic cost of LBP during this time is not limited to managing the pain exclusively, as causal relationships have been demonstrated between pain during pregnancy and mobility. This is related to activity levels pertinent to optimal fetal positioning and subsequent perinatal comorbidities such as caesarean section (Senecal et al., 2005), medication use (Guthrie & Martin., 1982) and both the level and duration of labour pain (King et al., 2003). The prevalence of LBP is known to increase with the duration of pregnancy and is at the highest point in the third trimester (Sabino & Grauer, 2008). Additionally, the prevalence of LBP in postpartum women increases in the year after delivery, with estimates from 28% after 3 months to over 50% after 5 months and 67% after 12 months (Brown & Lumley, 1998). In a similar manner to the general population of LBP sufferers, the majority of pregnancy related LBP confounds specific structural diagnosis, meaning that the source of LBP in pregnancy is commonly regarded as non-specific in the same broad category of NSLBP but may be related to, or aggravated by, changes in body posture with the development of muscle, joint and related ligamentous problems (Majchrzycki et al., 2010).

Pregnancy related LBP is considered generally to be comprised of two variant forms, namely LBP, which is defined as pain felt anywhere between the 12th rib and gluteal fold and pelvic girdle pain (PGP) which is pain felt in the area of the posterior sacroiliac joints with or without anterior pubic pain (Licciardone et al., 2010) (Fig 1.1). The aetiology of both types of LBP is not fully understood, and significant debate exists in the literature as to whether PGP is indeed a distinct clinical entity. Some authors suggest that PGP, due to its location over the sacroiliac joints is the result of instability or mechanical strain of these structures during pregnancy. Additionally, pain on performing specific activities such as bending or twisting have been posited as more specific to the experience of PGP rather than LBP (Vermani et al., 2010). However, despite attempts to define the two distinct syndromes of LBP and PGP, contention as

to whether these two conditions are distinct still prevails (Hall et al., 2016). Earlier work, failed to find any difference in the long-term prognosis between pain felt over the sacroiliac joints and other types of back pain which existed with pregnancy (Brynildsen et al., 1998).

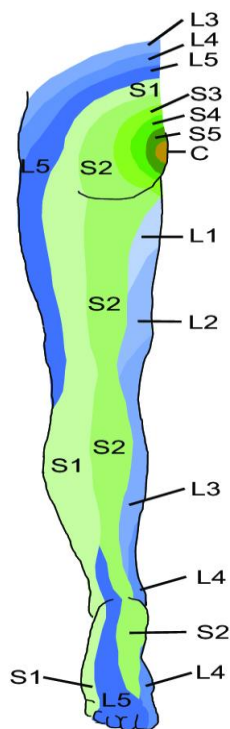
Figure 1.1: Anatomical Areas Showing subtypes of Pregnancy-Related Low Back Pain



With thanks to Kluge et al., 2010.

Discrete differences between the presentation of PGP and LBP become yet further elusive when considering the inherent connectivity of the sensory nervous system, as sensory neurons which supply the lower back tissues and pelvic joints run together in the same anatomical plexus and converge extensively in the dorsal horn of the spinal cord. These neurons then continue to run together before ascending to the brain where nociceptive impulses are perceived as pain (Peirs et al., 2015) (Fig 1.2). Given that the area of tissue which is served by a sensory neuron expands its receptive field during persistent pain (Fig1.3) adds further difficulty in establishing exactly which of these closely linked areas of the back is transmitting painful impulses to the brain (Neziri et al., 2010). Furthermore, given that much of the literature which attempts to define these two forms of back pain during pregnancy, is cross sectional in nature it does not provide an understanding of whether or not pain in these two areas fluctuates over the course of the pregnancy (Robinson et al., 2010). This represents a suboptimal understanding of the modifiability of the persistent pain state which is in keeping with recent understandings regarding the questionable plausibility of specificity or the “tissue causing symptom” paradigm which was previously widely regarded to be central to physical medicine (Lederman, 2011).

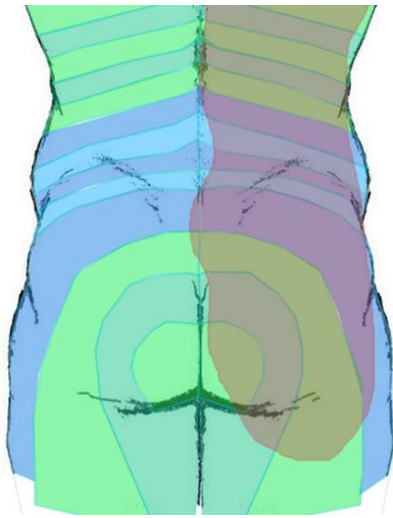
Figure 1.2: Shared Sensory Innervation of Areas Categorised as LBP and PGP



Areas of low back and pelvis which demonstrate shared sensory processing via the lumbosacral plexus.

With thanks to Osteolo, (2020)

Figure 1.3: Expansion of the Receptive Fields of Sensory Neurons in Persistent Pain



Schematic showing expansion of receptive field across of sensitised lumbopelvic region.

Adapted, with thanks to Rouland et al., 2016

In order to navigate the confusion as to whether the tissues of the lower back or closely linked pelvic joints are the cause of the pain in pregnancy related LBP, much of the literature does not make significant distinction between the two and instead refers to the overlapping condition of pregnancy related lumbo-pelvic pain (PR-LP) which is defined as pain occurring from the 12th rib to the gluteal fold and/or surrounding the pubic symphysis for more than one week during pregnancy (Mogren & Pohjanen, 2005; Wang et al., 2004). It is however acknowledged that women who present with pain in both areas of the lower back and pelvis appear to have worse severity of disability. What is established regarding this condition is that women who suffer from poorly controlled PR-LP have higher incidences of antenatal and post-natal depression (Long et al., 2020; Virgara et al., 2014), which underscores the need for timely management in arresting the progression of pain at this time in patients' lives. This is particularly important, given that pain related psychological distress in pregnancy is related to poorer outcomes in terms of functional disability such as the ability to move in a manner which permits normal engagement with daily life activities (Olsson & Nilsson-Wikmar, 2012). Interestingly, psychological distress and pain levels (particularly spinal pain during pregnancy) may prevent women from having an optimal birth as defined by perinatal health outcomes, and may contribute to comorbidities such as medication use, use of forceps, meconium-stained amniotic fluid and a longer second stage of labour (Brown & Johnston, 2013).

Previous studies of non-pregnant patients have demonstrated that the clinical picture of LBP and PGP (together comprising lumbopelvic pain) is influenced strongly by illness behaviour such as fear

avoidance (FA), catastrophising, pain related anxiety and maladaptive beliefs (Vlaeyen & Linton, 2000). Similarly, psychological distress appears to significantly influence the severity and response to therapy in sufferers of PR-LP (Wu et al., 2004). Less is known, however, about the specificity of how illness behaviours, such as these, vary between pregnant and non-pregnant populations. Given how important pregnancy may be to expectant mothers, it is reasonable to infer that the impact of pregnancy may feature in pain-related psychological distress in PR-LP. This is important in the context of more recent research which demonstrates that persistent pain is associated with aspects of lived experience which go beyond the previously established FA model. For example, a range of constructs such as mental defeat (Tang et al., 2007), loss of autonomy (Jongen et al., 2017), self-enmeshment (Sutherland & Morely., 2008) and guilt (Cândeia & Szentagotai-Tătar., 2018) have shown potentially significant relevance to persistent pain, particularly when that pain presents as spinal pain (Pincus et al., 2002). If nothing else, the distinct responsibility that a pregnant mother feels towards their unborn child may be an important substrate of maladaptive cognitions and behaviours in the face of PR-LP. Towards the successful management of PR-LP, further work which explores these aspects of the lived experience of PR-LP and potentially efficacious therapy is necessary.

Given that PR-LP shows a general trend towards worsening as gestation progresses, it is subject to the development of persistent pain. As discussed, behavioural determinants of pain-related disability and quality of life can appear within 14 days (Kovacs et al., 2005). This timeframe is much faster than the conventionally considered 3-6 months period which has gained widespread acceptance in the pain literature (Andersson et al., 1993). Pregnant individuals, therefore, who are suffering from psychological distress, such as anxiety, low mood and pain related cognitions, may be particularly vulnerable to the development of PR-LP related disability as their pregnancy advances. Therefore, psychological wellbeing during pregnancy, which is important in preventing poorer outcomes long term, is a factor which could be aggravated by pregnant women's inability and reluctance to use even weak analgesic medicine due to perceived risks of damage to the foetus (Werler et al., 2005). A lack of awareness regarding the impact of psychological distress and PR-LP is arguably at odds with optimal management, given that delays in treatment of musculoskeletal pain can result in behavioural determinants of persistent pain and disability far more rapidly than previously considered (Kovacs et al., 2005). Additionally, persistent pain during pregnancy has causal relationships with poorer clinical outcomes peri-natally and for successive pregnancies (Noren et al., 2002). It is therefore imperative that this population of patients receive timely and appropriate care.

In PR-LP, much like any persistent pain state, pain behaviours such as catastrophizing, a cognitive distortion which causes the sufferer to view a given situation as worse than it actually is (Quartana et al., 2009) have also been shown to be predictive of further incidences of LBP during pregnancy (Olsson & Nilsson-Wikmar, 2012). It is also clear that catastrophizing and low mood are predictive of low levels of mindfulness during persistent pain (Schutze et al., 2010). Mindfulness, a proposed ability to remain in the present moment and as such be more capable of health behaviours, is shown to be predictive of increases in fear avoidant behaviour; particularly catastrophizing which leads to subsequently higher levels of pain (Cassidy et al., 2011). This relationship between pain related illness behaviour has been established in sufferers who are pregnant and also non pregnant populations (Rainville et al., 2011). However, there is a lack of significant research which explores how these behaviours differ in pregnancy and what aspects of the lived experience of pregnancy may exacerbate or mediate this tendency.

Further complexity arises when we attempt to assess clinical populations which are affected by pain and exhibit illness behaviours such as catastrophizing. For example, during pregnancy, whilst illness behaviour may be predictive of pain levels and future incidences of pain and disability, it is also not constant and shows fluctuation even when pain levels remain consistent (Olsson et al., 2012). Given it is clear that the level of pain alone is not sufficient to drive illness behaviour in an intensity-dependent linear relationship, contextual effects in an individual's life may cause the perception of pain to be altered and thus avoidant behaviours and life choices which are driven by the fear of pain may be reduced depending on daily current circumstances (McCracken & Keogh, 2009). For example, emotional distress during pregnancy has been shown to impact the recovery of persistent pelvic girdle pain post-delivery (Bjelland et al., 2020). That said, it is clear from burgeoning evidence which supports the BPS and FA models, that individuals living with persistent pain have pain which is capable of being reduced by acceptance and increased by emotional distress, anxiety and fear. Towards a fuller understanding of these contextual significances specific to PR-LP, further research should explore why illness behaviours are inconsistent during pregnancy and how the determinants of this relationship could be used to guide management of the condition.

Due to this lack of consistency found with illness behaviour during pregnancy, assessing fear avoidance and how this impacts the level of pain intensity, functional disability, and future episodes of pain is challenging. Olsson et al (2011) assessed pain catastrophizing at weeks 19-21 and 34-37 of pregnancy respectively. Whilst as expected, the level and incidences of catastrophizing was predictive of higher proportions of postpartum LBP and disability, the authors found that this tendency was not stable during pregnancy. Given that fear avoidant behaviour in relation to LBP during pregnancy may

fluctuate it appears that there is no optimal window of gestation by which to assess this. Indeed, the broader contextual implications of NSLBP and PR-LP being a process which is experienced in terms of a relapsing and remitting continuation, rather than a single event, require diverse methodology to gain a fuller understanding.

The established risks of pharmacological therapy in pregnancy have led to the management of PR-LP during this time to be typically conservative in nature. Several Interventions which have been shown to provide clinical benefit are transcutaneous electrical nerve stimulation (TENS) (Keskin et al., 2012), therapeutic aquatic exercise (Granath et al., 2006), acupuncture (Kvorning et al., 2004) and physiotherapy (Sabino & Grauer, 2008). Many treatment strategies tend to focus on prevention because treatment late into the pregnancy is often difficult to implement (Sabino & Grauer, 2008). This is of particular concern when fear avoidant behaviour has become established and may then severely limit healthy movement and engagement with daily activity. The resulting disability is then correlated with poorer health outcomes perinatally as well as in the postpartum period (Licciardone et al., 2010). To reduce the burden of disease in pregnancy related LBP it is critical that efficacious therapeutic strategies be utilised, likely in the early stages of pregnancy so as to reduce the effect of pain and subsequent disability which potentially can last after birth.

1.5 Osteopathic treatment of PR-LP

An increasing number of pregnant patients in the UK choose to consult osteopathic practitioners for their musculoskeletal (MSK) pain (Sheraton et al., 2018). The primary presenting symptom in this case is LBP. Osteopathy is an established system of allied healthcare which is based on the principle that physiological well-being is affected by the mechanical interrelationships of the skeleton, muscles, ligaments, and connective tissues (GOsC, 2024). Defined by the British Medical Association (BMA) as a standalone discrete clinical discipline (BMA, 2000), its licensed practitioners perform manual therapy techniques such as soft tissue massage, stretching and joint manipulation to affect changes to the physical framework of the body. The discipline is commonly used to diagnose and treat a range of musculoskeletal disorders such as non-specific low back pain, repetitive strain, and the pain of arthritis. Of particular interest is that the profession's governing body, the General Osteopathic Council (GOsC) refers to the benefits of osteopathic treatment for changes in posture associated with pregnancy (GOsC, 2024).

The National Institute for Health and Care Excellence (NICE) recommends that techniques employed in osteopathic treatment be used in the management of lower back pain (NICE, 2009). With regard to the use of osteopathy in the management of PR-LP, the GOsC's recommendation that the therapy be suitable for the treatment of postural changes which are linked to back pain and functional impairment

at this time is supported by a small selection of moderate quality evidence which is focused on level of perceived pain and disability (Franke et al., 2014). There is, however, a lack of significant empirical evidence which supports the use of an osteopathic approach from a perspective which elucidates changes to fear avoidance and psychological health. Essential to the creation of this empirical research is a foundational understanding of the nature of how PR-LP is experienced and how osteopathic care (OC) may mediate this. Further study is required to confirm the validity of the GOsC's support for the role of OC in PR-LP, from a more psychologically informed perspective as well as the development of optimal approaches which the profession of osteopathy could adopt to augment the current care of pregnant patients.

Whilst osteopathy has an integrated understanding of pain-related psychological distress, there is a lack of demonstrable implementation within the praxis itself. For example, osteopaths have an arguably sub-optimally defined professional remit which is still entrenched within the "tissue based" and "hands-on" paradigm. This does not mean to say that there is no merit in traditionally applied manual therapy: however, it is clear that from the weight of evidence in support of interventions which address centrally mediated pain and pain behaviours, that there is room for further integration of these concepts (Zusman, 2002). The extent to which osteopathy's remit could be expanded, should the profession continually seek to embrace and implement greater understanding of psychosocial factors, could be considerable, particularly within the field of persistent pain. Many patients who consult osteopaths are suffering from pain such as this, whereby in lieu of an obvious physical cause, diagnosis and management have a functional or adaptive focus which is described in such terms. The ongoing therapeutic dialogue between patient and practitioner is considered to be characterised by positivist attempts to alter the behaviour of anatomical relationships between the muscles, bones and joints (Lunghi et al., 2016). Being primarily concerned with anatomical relationships, this common approach to "manual therapy" may however not fully address important aspects of the lived pain experience which are inherent to chronic pain and nor, given the lack of anatomical specificity of most PR-LP, does this treatment fully support the aetiological nature of the condition. It is well established that should patients experience higher levels of pain related fear and anxiety, they are more likely to develop fear avoidant behaviours such as catastrophising which can drive the development of helplessness and hypervigilance which establish a fear of movement leading to disuse, progressive disability and depression (McCarthy et al., 2004; Vlaeyen & Linton, 2000).

1.6 The Therapeutic Alliance

In attempting to understand how osteopathy may influence clinical outcomes in PR-LP it is important to conceptualise the "content" of what takes place within the therapeutic encounter of OC. The Therapeutic Alliance (TA) is a concept which is considered to be a measure of patient and therapist

engagement in therapy (Bordin, 1979; Hatcher & Barends, 2006). The TA is derived from Freudian psychoanalysis and is considered to have three essential components. These components are agreement on shared goals of treatment, agreement on tasks of treatment, and the development of a personal bond (Sagui-Henson et al., 2022). TA has been shown to have beneficial influence in the management of a range of conditions relevant to MSK pain such as knee arthritis (Lawford et al., 2021), persistent LBP (Taccolini et al., 2018; Zimney et al., 2025). Operating definitions of what constitute TA however, do vary across clinical studies (Babatunde et al., 2017) and it is therefore complex to ascertain what aspects of this are influencing clinical outcomes. What is currently understood within MSK care is that “strong” or strongly adhered to TA may increase rehabilitative exercise compliance (Moore et al., 2020). Additionally, concepts such as communication and its impact on autonomy (Søndenå et al., 2020), as well as empathy and shared decision making (Rodríguez-Nogueira et al., 2022) within MSK care may partially encapsulate the TA and lead to improved clinical outcomes

More traditionally, the TA has been associated with psychodynamic psychotherapy however it is consistently considered to be an important factor within psychological interventions such as CBT (Cameron et al., 2018). The TA is considered to be a consequence of therapist and patient’s mutual engagement and agreement on, the tasks of therapy irrespective of the specific nature of therapy (Morgan et al., 1982) and the concept has shown consistent statistical significance on the impact of therapy across meta-analyses (Martin et al., 2000; Bourke et al., 2021). Whilst the TA has shown significant associations between therapy and clinical outcome debate prevails regarding the relationship between cause and effect. Studies suggest that patients tend to see the alliance as stable and non-changing, throughout the process of therapy, whereas therapists tend to see the alliance as a more variable construct that fluctuates throughout the work of therapy (Martin et al., 2000). Additionally, the “therapist affect” or how capable individual therapists are at establishing alliances is associated with clinical outcomes (Baldwin et al., 2007). This means that individual differences in psychological history and personality of patient and therapist combine in different ways depending on the therapeutic encounter. In support of this, Safran et al. (2001) further state that the quality of the alliance is an integral aspect of how the TA influences therapeutic outcomes.

Given the demonstrated impacts that the TA can have in clinical outcomes (Taccolini et al., 2018; Lawford et al., 2021; Zimney et al., 2025) it is important in the context of how the TA in OC may influence the outcome of treatment within the management of PR-LP. Little is understood specifically around what characterises the TA of OC. Osteopaths are principally primary care practitioners who operate outwith of governing protocols or institutions such as the NHS. As such significant variables such as specifics of approach, style of treatment, techniques used, and treatment time may influence

the nature of OC in different ways depending on the individual osteopath (Gabutti & Draper-Rodi. 2014).

Specific to the psychological distress which accompanies PR-LP, recent work demonstrates that this is modifiable through psychological interventions. For example, motivational counselling on physical activity when provided to healthy inactive pregnant women has recently demonstrated to increase behavioural regulation, self-efficacy and autonomous motivation to exercise when compared to standard prenatal care (Knudsen et al., 2024). However, the authors of this study report that similar improvements also resulted from supervised, structured exercise training. Less is known specifically regarding the impact of psychological interventions on PR-LP but compelling evidence that psychological aspects of PR-LP can be positively impacted by approaches which address this is highlighted by preliminary evidence which showed that a CBT intervention (combined with a shared decision making intervention) has been shown to facilitate significant reductions in pain intensity, pain interference in general activity and work as well as reduced misuse of opioids for persistent pain during pregnancy (Shapiro et al., 2022). Additionally, ACT-based counselling has also been shown to reduce anxiety and increase quality of life in a pregnant population however these effects did not persist beyond short term follow-up (Vakilian et al., 2019). This finding is somewhat echoed by similar ACT based studies which demonstrated that effect sizes of improvement for both pain intensity and pain-related psychological distress and reduced as time passed (Lai et al., 2023; Hughes et al., 2017).

Therefore, given that osteopaths are placed to interact with individuals who are experiencing PR-LP it is imperative that aspects of the TA in OC are understood more fully to establish what components of care optimise clinical outcomes. This is particularly relevant considering evidence which highlights that that indeed OC may impact the psychological distress associated with persistent pain. For example, in a systematic review of the evidence Saracutu et al. (2018) found that in 16 RCTs which investigated the effects of OC two out of five trials reported significant changes depressive symptoms and two out of three trials reported significant reductions in FA. The authors further report that three out of four trials found significant increases in quality of life (Saracutu et al., 2018).

In the modern era osteopathy is principally considered to be a system of manual therapy which addresses physical pain and functional capacity (gosc.org.uk., 2017) As such the link between this form of therapy and these reported changes in psychosocial symptoms is not clear. Given that the intended focus of therapy in OC is not (unlike CBT or ACT) directed at treating psychological symptoms the relationship between the therapeutic “content” of OC and these reported effects is vague. Osteopathy is however, historically founded upon guiding “principles” which have been present since its inception in 1874, some of which report to consider the union of the patient’s mind and body in equilibrium (See

Section 3.6 For a detailed overview). Quite how osteopathy's underpinning principles inform the nature of OC however, or how consistently they are implemented by individual practitioners in the modern era is not fully understood. Nor is it fully understood how these concepts could impact individuals, specifically experiencing PR-LP. Clearly, further research is required into how the nature of OC establishes the TA in the management of PR-LP is required.

1.7 Rationale and aims of the project

Osteopathic treatment has been demonstrated to be effective in improving clinical outcomes of PR-LP in a range of randomised controlled trials (RCTs). A recent systematic review and meta-analysis of the literature concerning LBP (Franke et al., 2014) supported the use of osteopathic treatment in three out of four studies which used pregnant populations. The authors assert that this was the first review which focussed upon an "authentic" osteopathic approach whereby the outcomes were reported in relation to genuine osteopathic clinical appointments. Genuine osteopathic appointments are representative of OC rather than given "osteopathic techniques" used out with of a genuine clinical context. Franke et al. (2014) stated that of three studies which concerned themselves with pregnancy related LBP (PR-LP), two showed significant improvements in the outcome measures of pain reporting via visual analogue Likert-type scales (VAS) and ability to engage with daily activities via Roland Morris Disability Questionnaire (RMDQ) and Quebec Disability Scale (QDS). The remaining study did not demonstrate significant improvements. Of note however is that these findings were downgraded to low quality evidence due to inconsistency and imprecision.

Whilst these studies show some promise in being able to further the understanding of what osteopathic treatment may do to improve clinical outcomes in PR-LP, they do not address the multidimensional complexity of the experience of PR-LP, as many aspects of psychological distress are subsumed within the lived experience of pain which may not be captured by the VAS and self-reported outcomes of disability. This is further supported by increasing evidence which highlights the importance of contextual effects (CEs) in the management of persistent pain (Miller & Kaptchuck, 2008). CEs are aspects of the therapeutic encounter which impact the therapeutic alliance in either a positive or negative manner and have been shown to be linked to improved clinical outcomes and response to therapy. In the case of PR-LP managed by osteopathic care, which has limited validation for its proposed mechanism of therapeutic effect (Lederman, 2011), it is particularly important to establish why and how osteopathic treatment works, as doing so could highlight aspects of care that could be strengthened as well as those which are less useful or perhaps harmful.

In order to obtain a fuller exploration of the clinical problem of PR-LP and how the increasingly popular therapy of osteopathy can impact the condition, this doctoral project was structured around a

qualitative exploration into the experiential nature of PR-LP in patients who received osteopathic treatment. The initial study attempted to explore the lived experience of this population of patients via interpretative phenomenological analysis (IPA)(Smith & Osborn, 2003) and establish which aspects of this lived experience were not understood, and how osteopathic care may impact the condition.

To further explore this relationship, it was important to first understand the lived experience of women who are living with PR-LP. Understandings of the therapeutic alliance (TA) between osteopaths and their PR-LP patients aimed to provide an understanding of how OC may mediate the transition from PR-LP to pain free living. TA conceptualises factors involved in treatment that can act in combination with or independent of specific interventions (Martin et al., 2000). As discussed above (Section 1.6) The and is considered to have three essential components. These components are: agreement on shared goals of treatment; agreement on tasks of treatment; and developing a personal bond (Sagui-Henson et al., 2022). Furthermore, empirical support of the TA in pain management has so far demonstrated that positive TA is linked to reductions in pain intensity and severity (Fuentes et al., 2014) and increased compliance with therapeutically beneficial exercise (Beneciuk et al., 2001). As such, the role that this concept may have in the management of PR-LP was potentially important to understand how OC may impact the condition.

This project went on to use thematic analysis to understand how UK osteopathic practitioners establish the TA within the management of PR-LP. By gaining new and deeper understandings of the TA in OC for PR-LP, a second study aimed to uncover fuller comprehension of what is happening within this increasingly popular concept in the management of PR-LP. This project also aimed to identify potential areas of good and suboptimal practice which could inform the development of clinical guidance to improve therapeutic strategies within osteopathy and potentially inform related disciplines such as physiotherapy.

This project was structured over 3 stages:

i) Study 1 (IPA)

The first stage of this study used IPA to explore the lived experience of PR-LP and how the experience of this condition was impacted by OC.

ii) Study 2 (Thematic analysis)

The findings of Study 1 informed the content and design of a qualitative exploration of how UK osteopaths established their TA in the management of PR-LP. This study sampled multiple groups of osteopaths, arranged by years of experience and specialist training, to gain a rich dataset which was representative of UK osteopathic practice.

iii) Study 3 (Focus Group Exploration and Preliminary Validation of Findings)

The findings of Study 1 and 2 informed the creation of a draft initial pilot Clinical Toolkit (Appendix 21). This was designed to inform current osteopathic management of PR-LP. This toolkit was circulated and discussed through focus group research amongst a group of practising UK osteopaths who had experience of managing PR-LP. This stage provided preliminary validation of the draft guidance as well as highlighted areas of professional requirement for the best practice of osteopathic management of PR-LP.

Chapter 2: Reflexivity as Part of the Research Process

2.1 Introduction

Qualitative research is by nature subjective. This is due to the impact that researchers may have by bringing their biases and experiences to the theoretical decisions which are necessary to interpret data. Whilst qualitative research methodologies do recognise the subjectivity of the researcher, it is also a requirement of meaningful research to acknowledge how these biases and experiences may impact the research interpretation and process (Berger, 2015). The concept of reflexivity, or how researchers may reflexively acknowledge how their biases may impact the credibility and trustworthiness of data interpretations, is gaining increasing attention in qualitative research and as such should be prioritised in projects which are qualitatively based or have qualitative components (Rees et al., 2020). Reflexivity is considered to rely on an internal dialogue and critical self-reflection of the researcher's position within the research. This is underpinned by acknowledgement that this position can impact the overall process and outcome of research (Berger, 2015).

Different types of reflexivity which may augment the credibility and trustworthiness of qualitative research are understood to be personal, ethical, functional, cultural, and institutional reflexivity (Reid et al., 2018; Vandecasteele et al., 2024). This Chapter outlines the reflexive processes that were continuously involved in the design of the studies which comprise this project and interpretation of findings from these studies. The literature on reflexivity currently provides numerous definitions and is imbued with detailed debate regarding epistemological aspects of how the process should be applied (Gemignani, 2017). For the purpose of this study the definition provided by (Olmos-Vega et al. 2023, p, 242) was considered most suitable as it related to my own experience as a clinician and educator of clinicians:

“a set of continuous, collaborative, and multifaceted practices through which researchers self-consciously critique, appraise, and evaluate how their subjectivity and context influence the research processes.”

The application of reflexive processes throughout this project is described in the below section (2.2).

2.2 Reflexivity Within This Project

Within this project a reflexive approach was taken to the evolving nature of the work. As each chapter proceeded, this aimed to inform the development and design of the epistemological and ontological position of the research. For example, at the outset of the research project I reflected on the nature of the research question and how this informed the aims of the project. As this project was exploratory,

the design of the three studies involved were not clearly determined at the start and therefore did not have defined specific aims. It was therefore challenging to be able to visualise how a completed project would look or how suitably it could address the research questions. It also meant that I was unable to perceive how my own experiences would impact the research process. To address this, I engaged in two specific processes throughout the project. These were firstly, the keeping of a research journal (Ortlipp, 2008). This process allowed me to record thoughts, feelings, and reactions I had during the changing nature of the research process. This also allowed me to reflexively consider what assumptions I held that may impact the research process as well as introspectively consider the impact of my values and experience to date and how this may influence the process of study design and creation. Secondly, throughout the project I engaged with the process of peer debriefing (Ahmed, 2024). This facilitated access to different perspectives as well as benefit from awareness of personal biases and assumptions that I had not considered and how these may impact the research process and interpretation of findings. This was principally done via discussions with my Supervisory team, who sampled and compared coding of phenomenological data, reviewed analysis in relation to findings and challenged my values and assumptions as a researcher within my own professional discipline. My Supervisory team also reviewed the creation of specific reflexively created material such as the Clinical Toolkit (Appendix 21) which was used In Study 3 and challenged methodological assumptions which I had prior to the design of each successive study. Furthermore, I engaged with my professional peers and discussed the nature and appropriateness of the semi-structured interview questions (Appendix 11). A peer, who had specific experience of PR-LP also participated in a pilot interview prior to Study 1. This allowed me to explore and reflect upon aspects of ethical (Reid et al., 2018), and cultural reflexivity (Vandecasteele et al., 2024) which were present due to my position within the research as a man who was researching the lived experience of PR-LP.

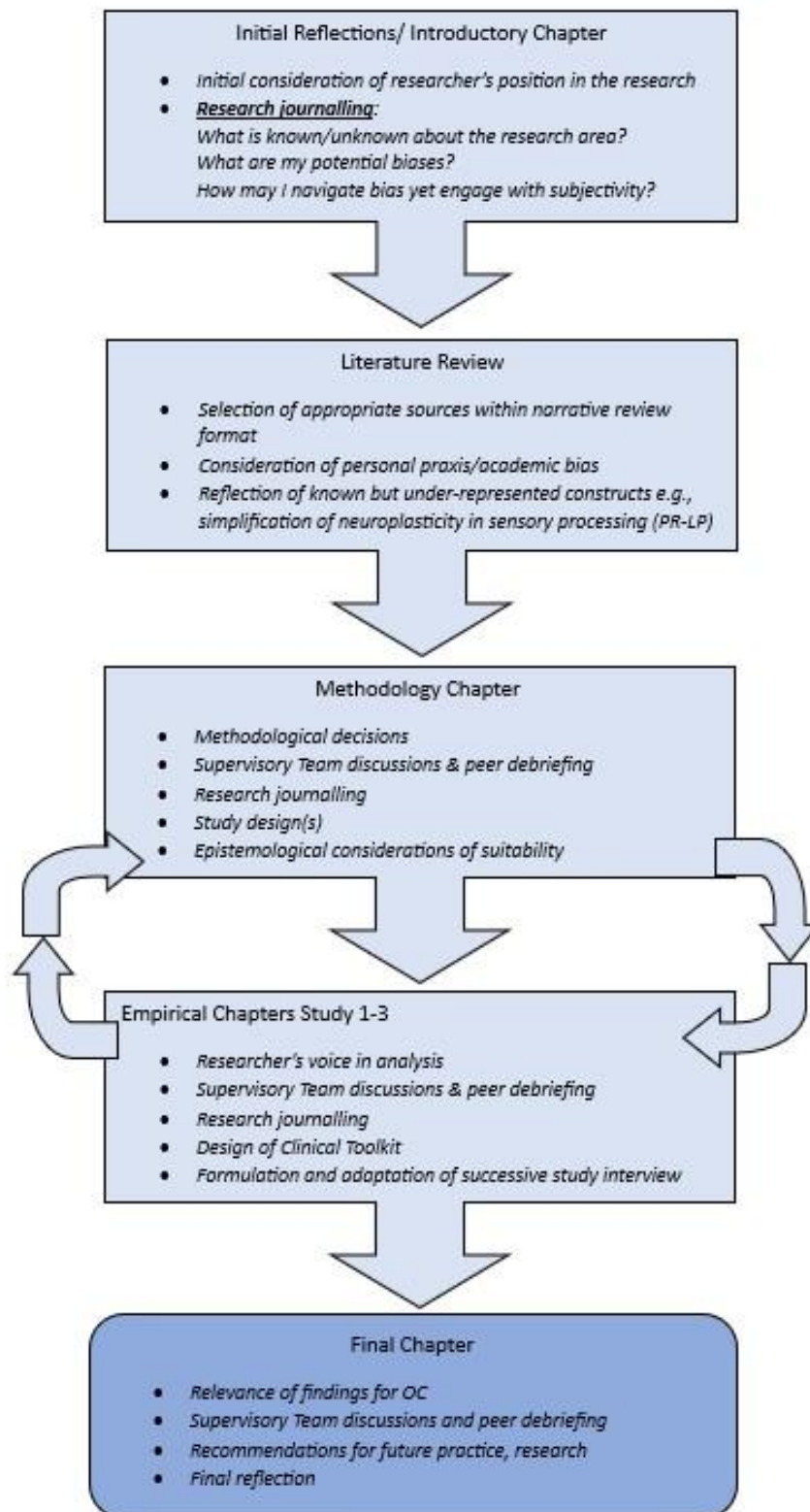
The aspects of ethical reflexivity (Reid et al., 2018) that this allowed me to appreciate were that, as a man researching PR-LP, I would need to be aware of my “outsider” status and as such the inherent vulnerability that some of the participants in Study 1 may feel when engaging in a deep personal discussion of their pain experience. This challenged my own assumptions that, as a clinician I was “sufficiently experienced” at interviewing people in pain. I had not fully perceived that the context to this was significantly different when asking questions about one pain issue for such a long time. This informed the ethical decisions regarding recruitment and protection measures for psychological distress within Study 1 (Chapter 4. Section 4).

Aspects of cultural reflexivity (Vandecasteele et al., 2024) were encountered in several areas. For example, in researching the profession of osteopathy, which I have been a practising member and educator of students, presented aspects of my own biases and values. Further to this, having spent a

fifteen-year period as an educator within the OEI sector, I may have been a cultural outsider to individuals within in my own profession. Perceptions of intellectual differences, or “assessing” rather than “exploring” participant knowledge may have impacted responses from participants in Study 2 and 3 (See Section 9.6). Clinicians favour specific ways of implementing practice and I needed to be aware of that fact when conducting interviews with professional colleagues. This was an ongoing and constant process through the interviews of Study 2 and 3, whereby I had to consider my position as the researcher when asking questions. I also had to reflexively consider my interpretation of findings and the “researcher’s voice” within analysis and discussion. This was of particular importance in thematic analysis where my own subjectivity was an essential part of the process (See Chapter 4, Section 5).

Concepts relating to institutional reflexivity (Hinostroza-Paredes, Y. (2023) were less relevant as I was not subject to the direct or indirect policies of a funding body to support this project. Rather, I was a staff member of a university conducting PhD research which was exploratory in nature. However, through regular discussions with my Supervisory team regarding the position of the researcher, I was able to share reflections and hold detailed discussions about my position within the research and the nature of suitability regarding methodological approaches which aligned to the overall project design. Below (Fig 2.1 maps the reflexive processes throughout this project.

Figure 2.1 Map of Reflexive Processes Within This Project



2.3 Personal Reflection

As a registered osteopath of nineteen years' experience, I have assisted many patients suffering from spinal and lumbopelvic pain with their rehabilitation. I have throughout this time developed my career with part-time teaching experience and the completion of a postgraduate MSc in Pain Science. From this I pursued part-time teaching at my Alma Mater and progressed my career to holding a full-time position as a Senior Lecturer in Osteopathy. During this time, I worked as the Programme Director in the establishment of a new osteopathic degree at a UK university and validation of this with the GOsC. I worked for eleven years in full-time academia within osteopathy and allied health where I routinely balanced the challenge of the need for evidence informed practice with the development of skill acquisition which supported professional artistry in my day-to-day training of undergraduate osteopaths. I returned to private practice at the end of the Covid-19 pandemic. In practice I see a large variety of patients including those suffering with PR-LP. I combine my clinical work with international guest lecturing to postgraduate clinicians on a range of topics centred around pain management within osteopathy. This requires me to be reflective to the use of evidence in primarily osteopathic and physiotherapy-based approaches and how these vary across Europe, in relation to the professional and regulatory status of these disciplines of different countries. Currently, osteopathy holds an unusual societal position in the UK. Due to common law osteopathic practitioners are one of the very few professional groups which engage with exclusively autonomous non-medical care. Like all healthcare disciplines, osteopathy is a praxis that faces the challenge of continued validation of its efficacy in the healthcare landscape. Regarding this, moderate to good evidence has demonstrated that osteopathy is effective for a range of musculoskeletal pain conditions: however, scope of practice and understandings of how osteopathy may impact the psychological aspects of persistent pain is limited.

During my early osteopathic training I found that the "art" of osteopathy is delivered by numerous osteopathic principles which are taught during training which have yet to be empirically validated. Yet, strong adoption of these principles is expected to allow the candidate to "think osteopathically". From seeing, over time, the beneficial effects of osteopathic care (OC) with my patients, I have developed an increasing level of criticality with regards to the mechanisms of change and effect in osteopathic treatment. Doubtless, OC seems to be effective in treating, for example, back pain, but I have often asked myself: Are osteopathic techniques working in the way which they are originally thought to? This question stems largely from the fact that I have become aware of the importance of how contextual effects and aspects of care such as communication and the use of language in the therapeutic relationship appear to bolster patients' ability to engage more effectively with pro-active rehabilitation strategies.

One area which I have had significant experience of is the management of pain during pregnancy. At first glance this scenario lends itself well to holistic facets of osteopathic philosophy in that the practitioner will help change, through osteopathic techniques, perceived anatomical stresses and strains throughout the body as a whole. These anatomical strains are not in the realm of organic pathology but represent the body's systems at a state of physiological dis-ease due to the physical burden that pregnancy represents. Osteopathy indeed provides relief for its patients. However, given that hands-on manipulative treatment is the mainstay of osteopathic therapy, there is a risk that the profession can be characterised as perhaps out of date and dualistic. This is particularly evident considering current understandings in persistent pain management which place psychological wellbeing at the heart of effective engagement with rehabilitation and improvement in clinical outcomes.

Despite my clinical experience of managing PR-LP, the nature of the PR-LP experience presented a significant challenge to me at the outset of this project. Previously, I had seen many pregnant women with pain (particularly PR-LP) in private practice, but the nature of the work to be undertaken during the time of the thesis gave me cause to reflect on how much I did not know of how the condition impacted those who lived with it. During researching the relevant literature for the introduction and literature review I became aware of a range of established aspects of PR-LP which potentially had affected the women I had cared for previously. This reflection caused me some unease; how could I have been so unaware of how PR-LP potentially impacted those in my clinical care? This understanding was humbling and highlighted for me the stark reality of my "outsider" status as a male researching PR-LP. I was fortunate to be guided by a Supervisory Team of female researchers who critiqued my conclusions from the findings of the research at each stage. This was valuable in allowing me to remain reflective and critical when I encountered positions which made me question if my "outsider" status should be a barrier to researching PR-LP from an experiential perspective. Additionally, this helped me realise that many osteopaths were of a similar "outsider" perspective and that my research into this subject was required to potentially assist them in understanding aspects of PR-LP which were previously not understood. For the future development of osteopathy to continue improving the way it is delivered, greater scrutiny should be given to aspects of osteopathic care that act as mediators of change in the psychological distress which drives the generation and maintenance of persistent pain. This is particularly important in pregnancy due to the impact which spinal pain during pregnancy has on clinical outcomes during the birth experience as well as episodes of pain during future pregnancies.

the modern era the following questions are presented to the osteopathic profession: What is the nature of the lived experience of PR-LP and how does OC impact this in a safe and positive way? Do

pregnant women with low back pain receive osteopathic care which is cognisant and ameliorative of psychological aspects of the pain experience which are implicitly linked to the establishment of persistent pain and poor future health outcomes? And indeed, if these factors do feature in the osteopathic management of PR-LP, are they processed tacitly by practitioners? Could this aspect of osteopathic care be improved?

Chapter 3: Literature Review

3.1 Introduction

Hall et al. (2005) highlight that there is currently a lack of supporting evidence for the use of complementary and alternative medicine (CAM) for the treatment of PR-LP during pregnancy. Given that a high number of women in industrialised nations will utilise CAM during pregnancy (Gaffney & Smith, 2004) there is an imperative to demonstrate the effect of this and what aspects of this broad spectrum of care may act as mechanisms of positive change. Franke et al. (2017) recently reviewed the literature specific to osteopathic treatment and found moderate evidence in support of reductions in PR-LP which correlated with increases in functional capacity in pregnant women. However, a lack of high-quality evidence which captures the lived experience of women with PR-LP prevails. Whilst systematic reviews of RCTS are widely regarded to the gold standard of evidence-based medicine (EBM) (Burns et al., 2011), there exist specific shortfalls in the collected understanding of how PR-LP manifests from a psychological perspective (Sjödahl et al., 2013). Commonly used pain assessment scales and disability-related functional specific movements are currently used as the cornerstone of empirical evidence surrounding pain (Chiarotto et al., 2016). However, there is a lack of comprehensive understanding of pain-related psychological aspects which have been shown to have significant predictive effects of clinical outcome in NSLBP (Pincus et al., 2002). There is also a lack of comprehensive understanding around what impacts the psychological aspects and lived experience of the related condition of PR-LP. There is therefore a need for a strategic priority to investigate the lived experience of this condition and what components of non-pharmacological pain management such as CAM and allied health professions may prove effective.

3.1.1 Aims of Literature Review

The aim of this narrative literature review was to identify and synthesize the extant literature which addresses the phenomenon of persistent PR-LP from the sufferer's perspective and how the popular therapy of osteopathy may impact this from an experiential nature. The twin aims therefore of this literature review were:

- i) How significantly does PR-LP affect those living with it? And in what domains of living does this occur?*
- ii) What is known regarding how osteopathy may impact the condition of PR-LP and how may this potentially impact the lives of those living with it?*

3.2 Literature Review Method

Relevant work from the peer reviewed literature was identified by searching four databases (PubMed, CINAHL, Cochrane library, and Psycinfo) between 1970-2017. As a large quantity of literature was

required due to both the need to review literature from a range of topics (PR-LP, psychological distress, osteopathy, and relevant related disciplines such as physiotherapy) this date was selected for this project via peer debriefing (See Chapter 2) in order to streamline the literature search to studies which were more relevant to the modern era. Additionally, this was considered to be a suitable date as previous studies within the osteopathic literature which occurred prior to this date may have been affected by variable methodological quality and detract overall from the greater quantity of relevant literature which occurred since this point. These databases reported the findings of the following conditions: Low back Pain, lumbopelvic Pain, Pregnancy, Psychological Distress (including anxiety and depression), Osteopathy, Osteopathic Manipulation, and Physiotherapy).

Initially, a pragmatic (York Health Economics Consortium, 2016) review method was attempted. However, due to the relatively small amount of literature which surrounds the psychological aspects and experiential nature of osteopathic treatment on low back pain during pregnancy, a narrative review of literature sourcing was selected. The literature search was adapted which encompasses a wider view of related peer-reviewed literature. For example, this review also included literature from the field of physiotherapy as a “sister profession”, as significant findings from the manual and physical medicine may have not been fully captured due to the relative lack of empirical studies specific to osteopathy. Reflexive decisions were then taken regarding the relevance of these studies. Where possible, peer-review sources were used and the review followed the methodology reported by (Gasparyan et al., 2011). Additionally, some sources were accessed which exist within the grey literature, such as commonly used osteopathic educational texts and widely regarded sources of osteopathic philosophy. These sources were included as they are central to the collective understanding of what represents the conceptual basis of osteopathy both historically and in the modern era. The sourcing of literature took place between December of 2016 and October of 2017 and used the strategy reported in Section 3.2.1 below. Reference lists from the articles were also searched and citation-chaining was carried out.

Research was reviewed using key and fundamental findings of relevance to the twin aims of the narrative review (See Section 3.2.1). Criteria were used as guiding frameworks to evaluate studies. Additionally, as advocated by Ferrari. (2015) these overarching frameworks were borrowed and adapted from literature which evaluates the validity of findings and risk of bias in peer-reviewed research. This was done to contain the focus on well-defined issues, establish clear inclusion and exclusion criteria, and concentrate on a specific corpus of research where there exists no such framework for narrative reviews. For example, where quantitative and qualitative studies are discussed, these were reviewed considering the Critical Skills Appraisal (CASP) criteria to evaluate the suitability of studies used in the literature review (Critical Appraisal Skills Programme, 2018). Separate

CASP criteria were used as guiding frameworks depending on the nature of studies reviewed. For example, RCTs were aligned to guidance using a distinct CASP set of criteria to systematic reviews as per the CASP framework. Similarly, cohort studies and qualitative studies were aligned to their own respective criteria via the CASP framework(s). For an outline of this process please see Appendix 23.

As this literature review attempted to understand and draw conclusions across a range of clinical disciplines and related topics, a balanced approach which was open and inclusive (Collins et al., 2005) yet considered the rigour of included studies was adopted. This necessitated the application of critical reflexive judgements as to what to include and how much “weighting” of key types of research design from the extant literature, the review should contain in order to most appropriately answer the aims of the literature review (Section 3.1). Predominantly, key findings from cohort studies, RCTs, systematic reviews and meta-analyses, as well as qualitative studies were utilised. This narrative review also included mixed methods studies, via a reflexive appraisal where appropriate.

Given the relative lack of research into osteopathy and OC in general, at the time of writing, the literature review included some studies which represented commentary and similar position-related papers (e.g. Lederman, 2011; Mcgrath, 2004; MacLennan, 1991) which highlighted relevant physiological or clinical findings. These studies were still included in the review as they were, via a reflexive appraisal, deemed relevant to the topic of the literature review due to novelty or a lack of further available sources relevant to the research question. Grey literature sources such as textbooks and websites were naturally, not evaluated via guiding criteria but are discussed in the context of where they were included via reflexive appraisal and cited in the literature review.

3.2.1 Literature Search

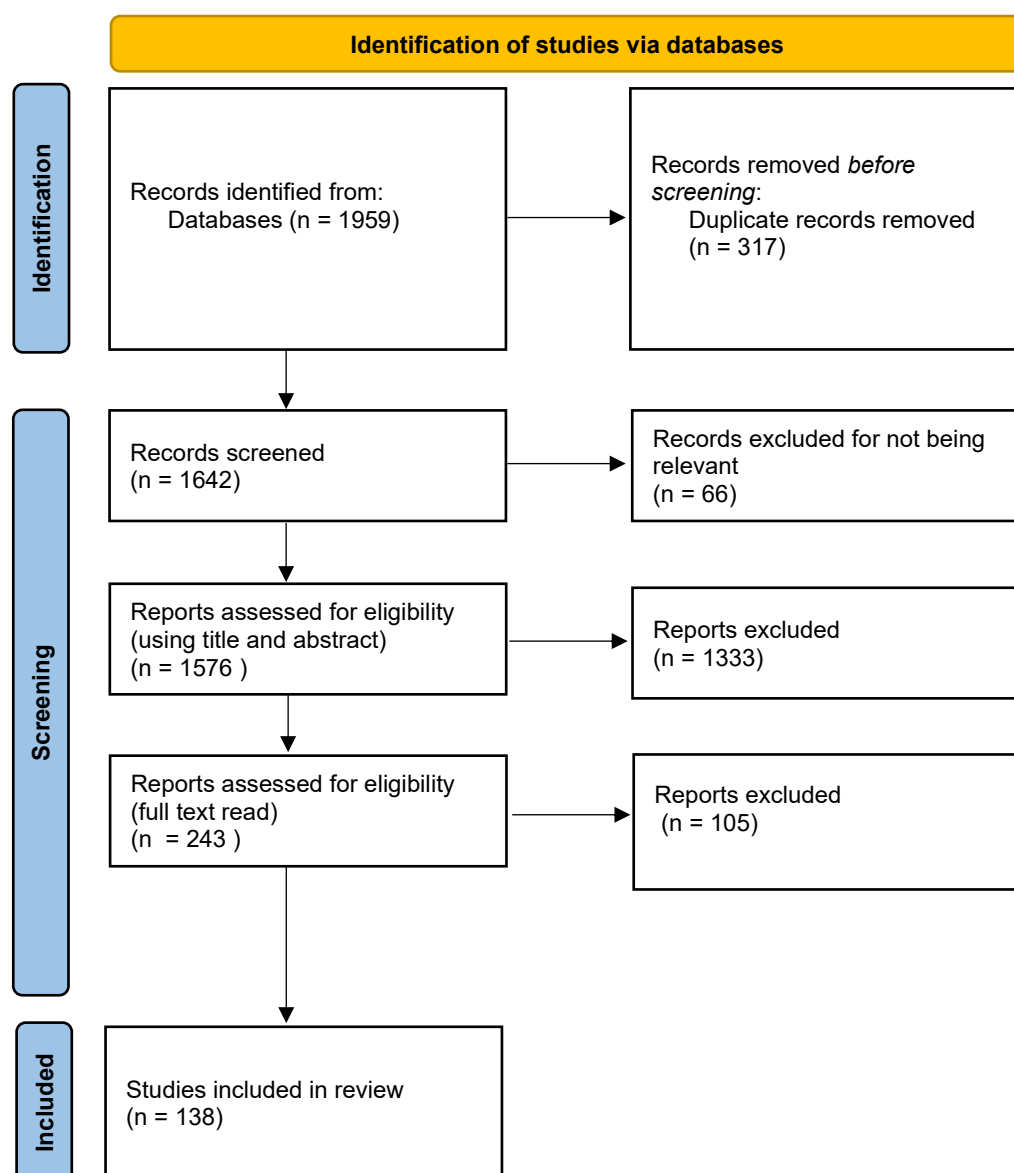
The literature search for this review was done initially as a broad search via PubMed, CINAHL, Cochrane library, Psycinfo databases. In a first instance, an advanced search was performed on each database to include the terms of (pregnancy OR pregnant) AND (low back pain OR lumbopelvic pain) AND (osteopathy OR physiotherapy OR manual therapy OR manipulation) AND (fear OR anxiety OR psychological distress). The results from this first search were limited, therefore following searches were made by only searching for 2 or 3 categories of terms at a time, all restricted between 1970 and 2017. The results were as follows:

- (pregnancy OR pregnant) AND (low back pain OR lumbopelvic pain) AND (fear OR anxiety) = 92
- (pregnancy OR pregnant) AND (low back pain OR lumbopelvic pain) AND (osteopathy OR osteopathic manipulation) = 185
- (Pregnancy OR pregnant) AND (low back pain OR lumbopelvic pain) = 1232

- (Osteopathy OR physiotherapy OR manual therapy OR manipulation) AND (pregnancy OR pregnant) AND (low back pain OR lumbopelvic pain) = 450

Total results were 1959. From these results, duplicates were excluded (leaving 1642), From here all titles were read and 66 excluded due to not being relevant to the review. The remaining 1576 were assessed for eligibility using title and abstract and 133 were excluded. The full text articles of 243 studies were read and 105 were excluded for not being eligible or relevant. 138 studies were subsequently included in this review.

Figure 3.1 Literature Search Utilised for this Review.



3.3 Persistent PR-LP During Pregnancy

Persistent pain is widely regarded to result from maladaptive neurophysiological changes which cause the nervous system to persist with the sensation of pain long after the initial injury has subsided (Woolf & Salter, 2000). The phenomenon is robustly associated with poor health outcomes, psychological comorbidities, and disability (Borg-Stein et al., 2005). However, an inciting injury or established process of actual tissue damage is not always required for this to take place. In the case of PR-LP an interesting phenomenon of generalised pain sensitivity, specific to pregnancy, has been elucidated which may have important considerations for the clinical management of pain during this time. Palsson et al. (2015) demonstrated that the somatosensory profile of normal healthy pregnant women deviated from normal non-pregnant subjects. Using the validated measures comprised within Quantitative Sensory Testing (QST), which involves the recording of sensory interpretation to a range of stimuli such as brush strokes and specialised filaments applied to the skin, the authors demonstrated that pregnant women who were suffering from PR-LP exhibited widespread deep tissue hypersensitivity which was correlated both with level of PR-LP and poorer measures of self-reported emotional health and physical disability. The authors assert that this increased propensity to pain sensitivity was due to the range of emotional and physical challenges which accompany PR-LP such as depression, and anxiety. This is important as anxiety, depression and related psychological stress have been shown to impact the patient's resilience to pain (Palsson et al., (2015). This, coupled with as the increased mechanical strain on the spinal structures during pregnancy, contributes to the clinical picture significantly. Therefore, increased psychological stress and mechanical pain during pregnancy leads to impaired coping strategies which demonstrate causality with the level of PR-LP (Albert et al., 2006).

Previous consideration of why there appears to be a widespread increase in pain sensitivity during pregnancy has focussed on the hormonal changes which occur at this time. During pregnancy, levels of the hormones relaxin, cortisol and oestrogen increase in order to fulfil specific functions such as increasing the laxity (or "looseness") of the pelvic joints to facilitate vaginal delivery as well as specific physiological aspects of maintaining fetal health. Given that all these hormones are known to increase progressively as pregnancy develops and that all are implicated in increasing joint laxity, research has attempted to delineate the effects of these hormones on MSK pain, specifically within the lumbopelvic region (MacLennan, 1991; Manarch et al., 2003; McGath, 2004). Within the work which investigates the role of hormones and pregnancy-related pain, significant contention as to hormonal significance in the aetiology of back pain exists. For example, MacLennan (1991) highlights the association between increased serum relaxin (a hormone which loosens ligaments in preparation for the pelvic expansion in birth) and pain levels in the third trimester. Whereas other work which investigates associations between hormonal fluctuations in pregnancy and pain demonstrate that there is no definite evidence

for the proposed phenomenon that joint laxity, under the influence of pregnancy-specific hormones cause pain from lax joints (McGath, M., 2004). Indeed, further confirmation from the literature regarding back pain, demonstrates that the level of joint laxity itself does not correlate strongly with lumbopelvic pain during pregnancy (Damen et al., 2002). Additionally, whilst hormonal influences may increase the range of motion in joints during this time, these changes would, whilst not uniform, be generalizable to the entire population of pregnant women and therefore do not explain why some women suffer significant and disabling PR-LP during their pregnancies and others do not. That the gonadal hormones increased during pregnancy are known to increase tactile sensitivity may in part explain this relationship; however, this understanding does not address whether this relationship is also present in pregnant women who are not experiencing low back pain. This may of course have been logistically difficult to investigate due to the ubiquitous nature of pain during pregnancy.

The challenge that pregnancy may pose on the musculoskeletal (MSK) system has historically been widely regarded to result from physical stresses which occur as the growing fetus, contained within the gravid uterus, increases mechanical stress on the spine and pelvis via distension of the abdominal contents and muscular wall (Dietz et al., 2004). Medical disciplines concerned with the treatment of MSK pain (especially spinal pain) during pregnancy have retained this focus up until the present day and rational therapy is focussed on the treatment of strained anatomical relationships of the involved muscles bones and joints (Stuge et al., 2003).

PR-LP has been widely regarded to be a common feature of pregnancy. The prevalence of the condition during this time has been estimated to be wide ranging (24-90%). However, the condition is most estimated to present as a feature of approximately 40-50% of pregnancies (Franke et al., 2017). PR-LP has been shown to increase in severity as pregnancy advances and peaks in the 3rd trimester and this is widely regarded to be related to increased mechanical stress on the spinal structures which support the abdomen as the uterus grows. Beyond solely physical pain, PR-LP has been shown to have detrimental effects on the quality of life (QOL) of pregnant women and leads to detrimental socioeconomic effects which, to date, have principally been determined to relate to loss of time from work (Noren et al., 2002)

3.4 Pregnancy Related Lumbopelvic Pain: The Impact on Wellbeing

The physical impacts of PR-LP during pregnancy have only relatively recently been empirically explored as to how they specifically affect health-related quality of life (HrQOL). This coincides with an increasing recognition of HrQOL in the clinical sciences due to its far-reaching impact on prognosis and management of a range of conditions. Ollson and Nilsson-Wikmar (2004) conducted preliminary work in women who were suffering from PR-LP using the Nottingham Health Profile (NHP) which assesses

subjects' physical functioning and perceived energy levels as well as the Disability Rating Index (DRI) which scores physical ability. The authors found that these self-reported measures showed significantly impaired perceived HrQOL in pregnant women with PR-LP when compared to non-pregnant women. Of note however, is that the study highlighted that pregnant women in general had a perceived lower level of HrQOL irrespective of back pain which may be attributable to the associated physiological strain of pregnancy. This is further supported by the fact that the authors chose to sample their subjects when they were very close to full term (34th-37th week) so the generalizability as to how these measures may offer useful information regarding PR-LP across the first and second trimester is questionable.

Physical functioning has been shown to be only a part of the picture of how individuals in pain are affected by their condition. This is true particularly in relation to benign MSK pain such as PR-LP. Measures of physical functioning have not been shown to consistently correlate well to prognosis or clinical assessment which guides management (Lederman, 2011). More relevant to the experience of PR-LP, and the progression to persistent pain, are measures of psychological distress as these are known to impair daily functioning (Stewart et al., 1989) and coping strategies (Pincus et al., 2002). Setse et al. (2009) explored the relationship between depressive symptoms in pregnancy and postpartum on health-related quality of life (HrQOL) in a longitudinal study and found significant correlations with lower HrQOL and depressive symptomology. The authors report that across the trimesters of pregnancy, depressive symptomology reduced HrQOL across a range of subscales including role-emotional functioning, general health and vitality as well as poorer levels of bodily pain. This highlights that psychological wellbeing is an impactful aspect of the experience of being pregnant and is relevant in the context of being predictive of post-partum pain which in turn is predictive of post-natal depression (PND) (Gutke et al., 2007). Moreover, depressive symptoms correlated with PR-LP have been shown to often have long lasting effects not only in the life of the mother, but potentially the child (Olsson & Nilsson-Wikmar, 2004). In fact, this concept has gained support from the psychological literature which suggests a deleterious effect of maternal depression and anxiety on early childhood development (Burt et al., 2002) and perinatal comorbidity (Brown & Johnston, 2013).

3.5 Healthcare Economic Impact of Pregnancy Related Lumbopelvic Pain

The economic impact of LBP has been well documented within the literature and approximately 7% of the UK population consult their GP each year with LBP. Whilst this may seem like a relatively small percentage, the economic impact of this condition has consistently been demonstrated to be high. This is likely as a proportion of patients suffer persistent reoccurrence which is predictive of the development of persistent LBP (Linton & Halldén, 1998; Thomas et al., 1999). The cost of LBP to the health service is significant, with earlier estimates demonstrating direct costs to the UK health service

to be £1632 million with 35% of this cost relating to the private sector and, as such, is absorbed by the sufferers and their families. The remaining direct healthcare costs are predominantly incurred to the hospital sector with 14% being attributable to primary care and the remainder concerned with community, medication, and radiology (Maniadakis & Grey, 1999). This figure also does not consider the impact of the condition on the healthcare system as keyworkers such as nurses and support staff succumb to the condition and require economically detrimental costs around sickness absence due to LBP (Hoogendorn et al., 2002). The health economic impact of LBP is not exclusive to the UK and other westernised nations' healthcare systems are affected in a proportionally similar way (Morken et al., 2003). Maniadakis and Gray (1999) further elaborate that these costs, however significant and crucially, detrimental to waiting times and resource allocation within the public sector healthcare system are superseded by yet further costs of £10668 million in relation to economic production losses and informal care provision. More recent data (2013), derived from the general practice primary care database in the UK indicated that total care costs of patients with persistent LBP were double that of matched controls without LBP (Hong et al., 2013)

Whilst there exists an abundance of data regarding the impact of LBP, less is known about the specific economic impact of PR-LP. This is due, in part, to confusion over the variant forms (PGP and LBP) (Chapter 1, Section 4) and how they should be categorised. Given that a very large proportion of PGP sufferers are pregnant and that the condition is viewed as a variant form of LBP, it is difficult to separate the specific costs of PGP alone. What is known however is that when the clinical features PGP and LBP overlap, and result in the condition commonly known as PR-LP, the severity of disability is reciprocally higher with increased occupational sickness absence seen in this population of women (Olsson et al., 2002). Truong et al. (2017) highlight in a comparative analysis of pregnancy related sick leave European counties that that prevalence ranged from ranging from 31.7%–34.8% in Sweden and the UK to 62.4%–71.3% in Norway, Serbia, Croatia and Poland. The authors state that the second most common form of sickness absence in pregnancy (after pregnancy complications) was MSK pain (neck, back and pelvis) at a prevalence of 16.2 %. Interestingly, disability and pain intensity have been shown to be associated with sick leave due to lumbopelvic pain in pregnancy. However, the overall picture is complicated by occupation and social security system (Gutke et al., 2014) which may be further indicative of BPS factors. It is also understood that the impact of PR-LP in women who suffer with pain post-partum is associated with increased sickness absence and healthcare usage in relation to their pain, particularly if the pain is of a continuous nature (Bergström et al., 2016).

As previously discussed, (Duncan, 2010; Engel, 1981), the recent importance of the biopsychosocial model in health and disease (Chapter 1, Section 3) has highlighted the significance of this model in understanding aetiological factors and potential therapeutic targets in persistent pain (Gatchel et al.,

2007). Work which has relatively recently focussed upon the economic impact of PR-LP has explored how the psychological state of the expectant mother may contribute to poorer outcomes, both personally to the sufferer and to the workplace, which is vulnerable to economic losses due to time off work from pregnant employees. Using a PR-LP model Morgen (2006) surveyed all women (n=639) who delivered their babies at one of two hospitals in northern Sweden from 1st January 2002 to 30th April 2002. The women were asked a range of questions regarding obstetric history, pregnancy, and univariate and multivariate logistic regressions were performed in order to calculate odds ratio (OR) and its 95% confidence interval (CI) where applicable. Overarchingly, the percentage of women who reported a perceived level of health as “poor” or “very poor” was low at only 2%. As their pregnancy progressed, women who also reported PR-LP demonstrated a deteriorating level of perceived health at 13%. The proportion of women overall who had claimed sick leave was 68% compared to 72% of women who suffered from PR-LP. Additionally, they reported PR-LP as the cause of sick leave in the case of 79.3% of participants and other causes of sick leave in the case of 56.1% of participants, thus indicting that PR-LP contributes significantly to socioeconomic costs which are over and above other complications of pregnancy (Morgen., 2006).

Given the established links between persistent MSK pain and poorer psychological wellbeing (Gureje et al., 1998; Huber et al., 2008) the link between how components of the biopsychosocial model may compound the prognosis of PR-LP and lead to increased healthcare usage is evident. For example, increased anxiety and depression levels are known to be linked to increases in the level of pain experienced by women with PR-LP (Kovacs et al., 2012). This tendency is mirrored in non-pregnant populations suffering from both LBP (Croft et al., 1995) and PGP (O’Sullivan & Beales (2007). Furthermore, it is understood that depressive symptoms such as anxiety and depression as well as MSK pain (predominately PR-LP) are the among the most common complications of pregnancy and contribute significantly to sickness absence during pregnancy (Karacam & Ancel, 2009).

Furthermore, aspects of psychological wellbeing such as anxiety and depression interact with pain in this clinical population in a way which may be more complex than initially perceived. To explore this link further, Seglem et al., (2017) recently conducted a large prospective cohort study of 2076 female twins born between 1967-79 in Sweden. The authors’ questionnaire study attempted to correlate baseline scores of anxiety and depression as measured by the validated Symptom Checklist 5 (SCL-5) with incidences of musculoskeletal pain and sickness absence data. Whilst previous incidences of musculoskeletal pain, including PR-LP, were associated with increased sickness absence, mental distress in the form of anxiety and depression was not. Interestingly, this study found also found no familial association between PR-LP. This finding is somewhat unexpected when considered alongside previous work which has demonstrated that poor psychological wellbeing contributes to further

episodes of mental distress (Keyes, 2005). However, this research does highlight that unknown factors, perhaps specific to the experience of MSK pain experienced by the pregnant women in this case, may contribute to increased loss of working hours. This finding strengthens the case for the need to further understand the lived experience of PR-LP.

Apart from sickness absence, relatively little is known regarding the specific use of healthcare by pregnant women suffering from PR-LP. This may in part be due to widespread cultural perceptions which view back pain in pregnancy as something which is normal rather than a significant, albeit common complication, leading women to not pursue conventional care for relief of their symptoms. Interestingly, women have been demonstrated to utilise a range of complementary and alternative medication (CAM) to help them manage the associated symptoms of pregnancy (Hall et al., 2016). This is further supported by cross sectional data from the USA which indicates CAM use for PR-LP during pregnancy to be approximately 62% (Wang et al., 2005). Furthermore, recent work indicates that pregnant women in westernised countries may be generally dissatisfied with standard care and as such seek alternatives for the physical and emotional burdens which pregnancy can bring (Close et al., 2016).

3.6 Psychological impact of Pregnancy related Lumbopelvic Pain

Given the socioeconomic burden of the disease and the high prevalence of the condition it is surprising that there is a lack of evidence regarding the specific impact of PR-LP on the psychological health of pregnant women. This population is affected by persistent LBP which is seemingly analogous to persistent LBP in non-pregnant populations in that the pain persists in the absence of a demonstrable “mechanical” cause or underlying disease process. However, somatosensory changes specific to pregnancy (Palsson et al., 2015), hormonal factors (Ostgaard et al., 1993) and the physical strain which the developing fetus represents (Bewyer et al., 2009) may contribute to the clinical picture to the extent that specific aspects of this pain experience reduce the generalisability of empirical findings from non-pregnant LBP studies.

In a prospective study, Woods et al. (2008) demonstrated that catastrophising at baseline predicted LBP in a follow-up of patients without initial LBP. Further to this, Ollson et al. (2012) have shown that pregnant women with PR-LP demonstrated elevated levels of pain catastrophising on the Pain Catastrophising Scale (PCS) which had causal relationships with clinical outcomes long after the birth of their child. This was evident in that women, who exhibited catastrophising, reported higher levels of lumbopelvic pain and lower levels of activity than pregnant women who did not catastrophise. This finding is supported by earlier work which reveals a tendency for catastrophising to be linked to future

episodes of pain post-natally. Indeed, this “priming” of persistent pain via catastrophising was demonstrated in a cohort study of 799 women which revealed that 20% of women who catastrophised over LBP during pregnancy had persistent pain which remained at 3-year follow-up (Noren, 2002).

Adding weight to the concept that illness behaviour may predict future outcomes in pregnancy and the postnatal period (Ollson et al., 2012), work from the last decade showed that if pregnant women catastrophising specifically about labour pain then they tended to experience significantly elevated intensity of pain during labour. This is perhaps unsurprising, although of particular note is that this cohort of 89 were more likely to experience “maternal blues” and impaired social functioning after the birth of their child (Ferber et al., 2005). However, this study does suffer from low power due to a relatively low number of participants who may also be affected by variant and uncaptured socioeconomic factors which exacerbate “maternal blues” (Buer & Linton, 2002). This could, however, be relevant to the long-term management of pregnant women who experience illness behaviour during pregnancy given the predictive relationship that “maternal blues” has on the development of postnatal depression (Beck, 2002). It is therefore clear that the psychological health of women during pregnancy should be of paramount importance to clinicians and care givers who manage them during this time. Further empirical support of the predictive nature of psychological distress during pregnancy has been demonstrated by Flink et al., (2009) who, using the PCS, highlighted that women who catastrophise in early pregnancy were significantly more likely to experience intense pain during labour. Additionally, the authors also report that the same women had poorer postnatal recovery in terms of resumption of normal physical activity levels at after delivery.

Impaired sleep is an established aspect of persistent LBP (Kelly et al., 2011) and has been further shown to be a potential feature of pregnancy (Won et al., 2015). Impaired sleep carries implications for tissue healing (Adam & Oswald, 1984) as well as hormonal regulation (Spiegel et al., 1999) psychological stress (Sadeh et al., 2004) and the individual’s ability to modulate pain (Finan et al., 2013). Additionally, impaired sleep has been demonstrated to exist in tandem with kinesiophobia; an excessive, irrational, and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to painful injury or re-injury (Beales et al., 2016), which is predictive of an increased tendency towards the component behaviours of the fear avoidance model and the development of persistent pain (Al-Obaidi et al., 2000).

To make sense of the causal and predictive relationships which persistent LBP has with psychological measures of illness behaviour a range of qualitative studies have gone some way in increasing the understanding of the condition. This is particularly useful in allowing researchers and the clinicians who provide care for persistent LBP patients to understand the lived experience of LBP from the

patient's perspective. This adds richness to the context within which pain management can be delivered and may provide novel targets and avenues of therapy in addition to validated quantitative scoring. Osborne and Smith (1998) conducted an IPA with chronic LBP patients who attended an outpatient spinal pain clinic. Importantly, these patients were previously assessed by their GPs to have no organic disease process or object physical injury which would have caused their LBP: in essence their pain was "non-specific" in nature. From the in-depth interviews the subordinate theme of "searching for an explanation" emerged. This caused significant frustration as, typical for the majority who suffer LBP, the participants suffered from pain for which no structural cause or lesion was evident. This work also highlighted, through the process of IPA, the subordinate themes of "comparing this self with other selves" and "comparing the self with future selves" which compounded feelings of loss and a lack of pleasure in daily life. This was due to their feelings of inadequacy regarding activities they were previously able to do, but were no longer able to do, compared to other individuals in their social realm. These findings, whilst potentially transposable to the phenomenon of PR-LP do however fail to capture the extent of the lived experience of PR-LP due to the uniqueness of the experience of pregnancy and how this may impact how PR-LP patients feel about their pain and pregnancy because of their condition.

Additional explorations into the concept of the "self" in people living with persistent LBP with no significant medical comorbidities or psychiatric illness, further demonstrate, again by qualitative interviewing techniques, a prominent theme of "living with a body separate from the self" (Smith & Osborn, 2007). This manifested as patients feeling that the parts of their body affected by pain, in this case the lower back, were perceived as distinct from the intrinsic self, difficult to control and somehow unpleasant. This notion of "separateness" adds weight to previously asserted theories that persistent pain has a negative impact on the concept of the self as time progresses as the stability of the sufferer's notion of self becomes increasingly distinct from changes in the body which are not automatically accommodated in the presence of persistent pain (Hellström, 2001).

Smith and Osborne (2007) further advanced the concept of loss or alteration to the self during persistent pain in a cohort of LBP sufferers who had been experiencing pain for at least 6 months. Semi-structured, in-depth interviews were used via an IPA. Results remonstrated a prominent theme of loss of identity induced by the persistent pain state, whereby subjects reported a schism between the "nice self" and the "nasty self". The latter 'self' was attributable to poor social functioning as the negative aspects of the pain experience were directed towards individuals, via negative behaviour within the social realm of the sufferers. Further to this, the participants reported a loss of compassion towards others who were suffering difficult or painful experiences. However, this finding may not be

immediately generalizable to the experience of PR-LP because the subjects were not pregnant and as such their world view would have been affected differently.

The concept of alterations in the perceived self, in persistent pain patients, has been further advanced by Pincus and Morley (2001). The underlying principle here is that aspects of the patient's perceived self, become "enmeshed" in the cognitive and emotional aspects of the pain experience. This "enmeshment" was principally considered to lead to problems with emotional adjustment which caused depression. The link between self-enmeshment in pain and depression has interestingly found empirical support via comparison with levels of reported discrepancy of actual and hoped-for self, and the Hospital Anxiety Depression Scale (HADS) as well as the Beck Depression Inventory (Sutherland & Morely, 2008). It is important to realise that the concepts of self-enmeshment and related depression demonstrated construct validity across a range of benign chronic painful conditions and not just spinal pain. However further enquiry which is condition-specific may yield deeper, more clinically relevant insight into the prevailing nature of self-enmeshment and depression in separate populations and demographics. Sutherland and Morely (2008) further report that despite positive correlations with depression and persistent pain, no main effect with anxiety prevailed when comparing the perceived discrepancy between the actual and hoped-for self. However specific interactions on the anxiety subscale of the HADS revealed specific motivational preferences such as autonomy and sociotropy which are widely regarded to be personality dimensions related to an individual's vulnerability to depression (Sato et al., 2001). These insights, however useful to understanding the experience of LBP, however, may not fully capture the extent of PR-LP as they fail to capture experiential aspects of the pregnancy which may exacerbate physical symptoms and clinical outcomes. Indeed, there is a lack of qualitative enquiry into these aspects of self-enmeshment in pregnancy which, if addressed may offer a new therapeutic focus in the management of PR-LP.

In addition to psychological measures of pain and dysfunction such as FA (Waddell et al., 1993), catastrophising (Ollson et al., 2012), and loss of self (Hellstrom, 2001) it is arguably important to review how the pain-related emotional state alters the tangible, or perceived aspects of a patient's day to day life. A small body of work has investigated the changes in world view in relation to persistent LBP. Walker et al. (2006) highlight that feelings of practical loss were a predominant theme to emerge from an IPA investigating chronic back pain patients attending outpatient pain clinics. The loss, in this context, emerged as a consistent thread throughout the subjects' narratives of living with LBP and was focussed on loss of abilities and roles and interpersonal relationships as well as employment and subsequent financial related loss. It is straightforward in this context to appreciate that the impact of persistent LBP can have damaging effects on the component parts of an individual's identity which

then compromises their lived experience. Earlier work (Miller & Omarzu, 1998) define loss in this material context as “life events or changes that resulted in the participants being or feeling deprived of something they valued. Whilst this work also provides insights into the lived experience of LBP, there is a lack of similar work which has been conducted in pregnant populations therefore generalizability to a PR-LP is likely to be impaired due to the specific nature of the experience of pregnancy.

More recent investigation into the lived experience of persistent LBP has revealed further dimensions which add to current understandings of how this clinical problem may impact the psychological state of the sufferer. In a meta-synthesis of the qualitative studies in the field of LBP, Snelgrove et al. (2013) collated a range of studies which identified that loss of the self, broadly manifested as a discord between the individual’s concept of a capable “valued self” and the self which experienced increasing levels of functional incapacity, in the presence of persistent pain. In addition to this loss of the self, this research also identified a wide range of psychological comorbidity in the presence of pain such as self-loathing, anger and depression (Snelgrove et al., 2013; Vroman et al 2009) Furthermore, less commonly considered facets of the persistent LBP experience were identified, such as loss of dignity (Crowe et al., 2010), shame (Slade et al., 2009) and disruption of family and occupational roles (Wade & Shantall, 2003). Clearly these aspects of the experience of persistent LBP have significant effect on sufferers and are perhaps not fully captured by psychological measures commonly used in quantitative studies, which aim to outline the psychological nature of the condition.

Qualitative research strategies have also been shown to be useful in illustrating how persistent LBP sufferers develop strategies to coping with the physical limitations which are associated with the condition. It is interesting to note that despite the significant importance which is, perhaps erroneously, attributed to back-specific functioning in LBP, that little work has been conducted into the experience of how this is navigated by the sufferer (De Souza & Frank, 2000). To address this, relative lack of literature, regarding the worldview of persistent pain sufferers, De Souza and Frank (2000) investigated patient narratives with LBP sufferers attending an outpatient pain clinic in the UK. All participants were suffering from persistent LBP of a mean total duration of 10.2 years. The authors utilised a qualitative “framework approach” to elicit patient narratives via semi-structured interviews. Emergent themes from the narratives highlighted that sufferers of persistent LBP did indeed struggle to cope with daily activities such as sleep and rest, and to experience mobility issues such as standing and sitting and climbing stairs. Additionally, the participants in this population revealed significant problems with engaging with leisure activities.

The concept of mental defeat has relatively recently been identified as a cognitive phenomenon which is implicated in the experience of persistent pain. Sufferers of long-lasting pain may perceive that they

are experiencing a “defeat of the mind” or that the pain has taken over to the point that they cannot cope with it (Tang et al., 2007). Previous work had supported that mental defeat was not exclusive to persistent physical pain and has been shown to also occur with post-traumatic stress disorder (PTSD) (Ehlers et al., 1998) and depression (Gilbert & Allan, 1998). Interestingly when depression, which is a well-established comorbidity of persistent pain, is characterised by mental defeat, the perception of this is strongly correlated with severity of the depressive symptoms. Quite how this detracts from the psychological wellness of the patient in pain has yet to be fully elucidated in the literature regarding LBP or PR-LP. Given that mental defeat has also been conceptualised in the context of loss of autonomy which causes the sufferer to give up efforts to retain identity and self-will (Ehlers et al., 1998), important considerations of this concept in pregnancy related LBP arise. For example, considering projected aspects of the duty of imminent motherhood in sufferers of PR-LP, the concept of mental defeat may prove highly detrimental to the perceived ability of the individuals’ future ‘self’ to cope (Sutherland & Morely, 2008). This may be theoretically exacerbated by worry over role-based aspects of motherhood in general, which as a stage of psychological development is known to involve conceptual transitioning to a new or future “self” (Mercer, 2004). Given that pain related psychological distress during pregnancy, such as catastrophising (Olsson & Nilsson-Wikmar, 2012) impacts future pain and disability, this concept warrants further investigation.

3.7 Osteopathy Within the Context of Mainstream Physical Medicine

Osteopathy is a healthcare discipline which originates from one individual, Dr Andrew Taylor Still, an American frontier surgeon who postulated that health and disease were related to the inter-relationships of the living body (Stark, 2013). In his autobiography Dr Still stated:

“On June 22nd, 1874, I flung to the breeze the banner of Osteopathy. For twenty-three years it has withstood the storms, cyclones, and blizzards of opposition. Her threads are stronger to-day than when the banner was first woven. Her colours have grown so bright that millions now begin to see and admire and seek shelter under her protecting folds from disease and death. Mothers and Fathers come by legions, and ask why this flag was not thrown to the breeze before”.

“It has taken many years to prepare the ground to sow the seeds of this as well as any other truth that has come to benefit man so be patient, have faith in God and the final triumph of truth, and all will end well”. (Still, 1897 pp.108-109)

At its heart osteopathy attempts to address what is termed “somatic dysfunction”, a perceived imbalance with the optimal function of muscles, bones and joints (Lunghi et al., 2016). This has historically been performed central to Dr Still’s theory, that if the structure of the body (inter-relatedness of movement, tension and symmetry of the body tissues) is maintained then optimal flow of blood and lymphatic circulation will be achieved. The result of this is considered to be the maintenance of good health and the prevention of disease (Stark, 2013). The concept of osteopathy pre-dated modern medicine and is philosophically aligned to the principles of “vitalism” and the “hygienic life” that were prevalent at the time of its inception. Dr Still was an allopathic physician who, in response to several of his children dying from meningitis, became frustrated with the ineffectiveness of modern medicine which was available during the late 19th century (Thornhill, 2020).

3.7.1 Osteopathy Today

The practice of osteopathy today is broadly divisible into osteopathy in America and osteopathy in the rest of the world. American “Osteopathic Physicians” are medical doctors who train at medical schools which were historically schools of osteopathy and as such to a varying degree, retain some of the physical manipulative techniques taught alongside training in standard medical approaches. Identifiable by the suffix DO meaning “Doctor of Osteopathy” rather than MD to indicate “Doctor of Medicine”, these practitioners retain the rights to train and practice all aspects of allopathic medicine. As few as 5% of DOs in America maintain their practice of osteopathic techniques with remained not participating in this as part of their day-to-day medical practice (Fry, 1996)

Osteopathy in the rest of the world is practised as a form of physical medicine which uses a range of eclectic “osteopathic techniques”. These range from soft tissue and joint massage, mobilisation and manipulation. A discrete body of grey literature with some supporting empirical work has since osteopathy’s inception attempted to collate and validate these approaches (Chila, 2010; King, 1997). Currently the focus of osteopathy is MSK problems, and a defined scope of practice depending on the nation and level of national regulatory framework restricts osteopathy to this area of clinical work. In the UK, osteopaths would have a clinical remit very similar to that of a physiotherapist or chiropractor. Of note is that non-medical osteopathy has developed areas of physical assessment and treatment which concerns itself with putative motion (and dysfunction) of the microscopic movement of the bones in the skull (cranial osteopathy) (Gabutti & Draper-Rodi., 2014) and movement (and dysfunction) of the digestive system (visceral osteopathy) (Twining, 2012).

How an individual osteopath practises can vary considerably, depending on their choice and focus of eclectic approach. For example, some osteopaths work primarily “structurally” and concern themselves with the relationships of the MSK system whereas some work exclusively with either the

cranial or visceral approaches of the profession. The inherent freedom to this variability of practice means that a given osteopath can work exclusively within one of these styles of practice or engage with the range of available styles of technique. This makes defining osteopathic practice complex, and much debate over the validity of different styles or “camps” exists today (Cotton, 2013; Gabutti & Draper-Rodi, 2014; Guillaud et al., 2016).

Osteopaths are ontologically unified, however, in that their profession is underpinned by established historical philosophies. These are captured by “the osteopathic principles” (Fig 3.1). This conceptual framework stresses the interrelatedness of the patient’s mind-body-spirit and asserts that true health can only come from these components functioning in equilibrium (Zegarra-Parodi et al., 2021). Broadly, these philosophies state that for an individual to find health and prevent disease, all aspects of their physical body and mental state must be in equilibrium and changes in physicality will affect the health of the mind, and vice versa.

Figure 3.2 Osteopathic Principles

- 1) *The body is a unit; the person is a unit of body, mind and spirit.*
- 2) *The body is capable of self-regulation, self healing, and health maintenance.*
- 3) *Structure and function are reciprocally inter-related.*
- 4) *Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the inter-relationship of structure and function.*

(American Osteopathic Association, 2016)

Realistically, many osteopaths today likely practise a form of manual therapy which is very similar to techniques of physical medicine which have been developed in tandem by similar professions such as physiotherapy and chiropractic. It is therefore difficult to discern what differences exist within the application of these professional practices. However, to aid with this, it is useful to consider that osteopathic clinical research in RCTs is generally divisible into two paradigms: Either the effect of identified or standardised osteopathic techniques (1 or more) and how this relates to clinical outcomes; or the effect of real-world osteopathic appointments (indicating eclecticism) and how this relates to clinical outcomes (Franke et al., 2014).

In 2004, with increasing interest surrounding the burden of LBP and the increasing use of manipulative therapies in the management of the condition, the United Kingdom Back Exercise and Manipulation

(UK BEAM) trial was conducted to evaluate the utility of physical treatments in the management of LBP. This trial, which was one of the first large studies which validated the use of spinal manipulation in the modern healthcare landscape, utilised the primary outcome of the RMDQ to establish effective functional impairment in persistent LBP sufferers without significant comorbidity. A pragmatic randomised controlled trial model was used to survey 181 general practices and 63 outpatient community settings in the UK. This RCT compared the effectiveness of exercise prescription and spinal manipulation, as performed by osteopaths and chiropractors against “best care” in general practice. “Best care” in this case refers to providing advice to continue normal activities. All groups improved over time. Exercise improved mean disability questionnaire scores at three months by 1.4 (95% confidence interval 0.6 to 2.1) more than just “best care.” For manipulation, the additional improvement was 1.6 (0.8 to 2.3) at three months and 1.0 (0.2 to 1.8) at 12 months. For manipulation followed by exercise, the additional improvement was 1.9 (1.2 to 2.6) at three months and 1.3 (0.5 to 2.1) at 12 months. (Underwood M., 2004). This trial therefore demonstrated that disability could be mediated by a combined intervention whilst also addressing previous criticism of smaller trials which had found similar results but were considered skewed due to therapy not being provided in a standard NHS environment (Assendelft et al., 2013). This large study went some way to address the potential difference between the nature of the main professions which practise spinal manipulation (osteopathy, chiropractic and specialist physiotherapy) via adopting a consensus driven protocol in conjunction with their respective UK professional associations (Harvey et al., 2003). Importantly, this trial demonstrated no differences between whether the manual therapy was performed on NHS or private premises which allays potentially legitimate concerns that the improvements in this group could be due to contextual effects of the environment or the perceived additional value of increased cost in private practice. However, regarding the use of manipulation, the UKBEAM trial should perhaps still be best viewed as an analysis of the effect of manual therapy rather than the different professions who provide it. This means that assertions as to meaningful differences between for example, chiropractic and osteopathy, are not fully accounted for when comparative audits of cost effectiveness and discrepancies in the amount of treatment sessions required for the management of LBP prevail (Korthals de-Bos et al., 2003; Skargen et al., 1997).

The lack of clarity regarding the meaningful differences (if any) which exist between professions who offer manual therapy creates continued confusion in the healthcare landscape. Clearly there is empirical support to date for manual therapy approaches in the management of LB. However, given that osteopathy is predominantly conducted outside of the NHS, there is a lack of specific protocols for the treatment of named conditions such as LBP. Indeed, the presence of protocols in OC may be conflicting with praxis as the professional literature regarding the osteopathic approach champions a

tailored and individualistic approach to treatment. Chown et al. (2008) in a prospective study, compared the effects of specialist physiotherapy, group exercise and osteopathy on Oswestry Disability Index (ODI), EuroQol-5D and self-reported measures. All three treatments indicated comparable reductions in mean (95% confidence intervals) ODI at 6-week follow-up: group exercise, -4.5 (-0.9 to -8.0); physiotherapy, -4.1 (-1.4 to -6.9); and osteopathy, -5.0 (-1.6 to -8.4). The authors did however find that patients were more satisfied with one-to-one sessions rather than group exercise sessions. This finding is further supported by Westmoreland et al. (2007), who highlighted greater levels of satisfaction and perceptions of empathy amongst NHS patients attending an osteopathic outpatient service for persistent pain.

Optimising levels of patient satisfaction are important when considering the utility of a given intervention but quite what causes this increased satisfaction is unknown with respect to osteopathic care (OC). As previously mentioned, osteopathic patients may perceive that their caregivers are able to spend more time with them, which logically can facilitate a more meaningful therapeutic alliance. Although, given that the appointment times within osteopathic practice can vary considerably (GOSC, 2017) and that physiotherapy appointments on the NHS for LBPP can exceed these parameters, then time spent may not be the only factor involved. Earlier work (Korthols de-Bos et al., 2003) conducted an analysis of the comparative clinical outcomes and cost effectiveness of manual therapy in spinal pain, identical to that provided by osteopaths in addition to physiotherapy and standard care as provided by a GP. The manual therapy group resulted in faster improvements up to 26 weeks and was less expensive than physiotherapy and standard care. The authors report negligible differences in improvement compared to physiotherapy and standard care demonstrated at 52 weeks. However, this study was conducted on subjects who complained of neck pain rather than PR-LP so generalisability for this population is weak based on this. However, given that arresting the progression of pain earlier in the timeframe of the condition could naturally result in less time for the establishment of psychological determinants of persistent pain, the effect of manual therapy approaches over and above physiotherapy and standard care requires further investigation.

3.7.2 Osteopathic Management of Low Back Pain

Over the last 30 years, international clinical guidelines have remained largely similar for the management of NSLBP. Since 1987 when the Quebec Task Force highlighted an overarching lack of quality empirical support to inform the management of NSLBP, many reviews have been conducted across the globe (Koes et al., 2010). NSLBP guidance regarding medication use (Bouwmeester et al., 2009), bed rest (Waddell et al., 1997), activity levels and back-specific exercise (Hayden et al., 2005) have remained largely consistent inter-continentially. Interestingly, the one aspect of clinical management which has found inconsistent support for its use is manual therapy, with some nations

such as the UK and the Netherlands finding in favour of manual intervention if the patient does not respond to front line therapy, and others recommending it as optional e.g. Spain, & Australia (Koes et al., 2010). The reason for this is not fully understood but arguably may range from the divergent quality of manual therapy studies and socio-political factors regarding the uptake of these types of interventions in the host country. A further aspect of the discrepancy in recommending manual therapy is that most guidelines do not specify strongly as to which manual therapy profession may be recommended over and above another. This may be straightforward to understand, given that a significant amount of the empirical support, or lack thereof, is concerned with addressing specific techniques utilised by the professions themselves, such as spinal manipulation, massage, and mobilisation (Aure et al., 2003). This presents a particular confusion for potential patients whilst also being at odds with the professions themselves (principally osteopathy, chiropractic and manually based physical therapy) which have distinctly defined principles of therapy (gosc.org.uk., 2017, www.csp.org.uk., 2017, www.gcc.org.uk., 2017). It is therefore with a critical view that one must interpret the data from studies which examine one technique as practised by a manual therapy such as osteopathy. This is due to the possibility that this may not be immediately generalisable to the clinical efficacy of treatment offered within a package of care, via the therapeutic relationship most reflective of professional praxis. Indeed, the diverse nature of practice within OC itself is poorly characterised by one specific manual therapy technique (Fawkes et al., 2014).

Limited data exists which provides empirical support for the role of osteopathic treatment in the management of LBP. However, a small number of systematic reviews have highlighted overwhelmingly encouraging results. To date there have been four systematic reviews which collate the evidence for osteopathy and the treatment of LBP. The earliest of which, Licciardone et al. (2003), concluded that osteopathic treatment significantly reduced LBP, compared to placebo for up to three months post-treatment. However, the results of this review can be criticised as the authors did not differentiate between studies which utilised osteopathic manipulative treatment (OMT) as part of an osteopathic therapeutic encounter and single-use techniques, used by osteopaths such as spinal manipulation. This is of note when attempting to address the validity of osteopathy as a therapy for LBP due to osteopathy's use of a range of many manual techniques (with different putative mechanism of action) which include, but are not exclusive to, spinal manipulation.

Further work by Licciardone et al. (2013) compared the effect of osteopathic manipulative therapy (OMT) in combination with ultrasound therapy for chronic low back pain in an RCT comprising twelve sessions of therapy. This study was interesting in that it utilised sham OMT and sham ultrasound. The authors reported that whilst there was no statistical interaction between OMT and ultrasound, both

OMT and sham OMT groups achieved an improvement in symptoms. However, the OMT group were more likely to achieve moderate-substantial improvements in back-specific functioning and work disability specific to back pain which resulted in reciprocal reductions in analgesic medication use. The intervention in this case consisted of a regimen of OMT selection which the osteopaths could use based upon what they detected through clinical reasoning and physical examination. This study met the Cochrane Back Review criterion for a medium effect size in relieving chronic lower back pain which was demonstrated over a short duration (twelve weeks): however this study did not evaluate pregnant women and, as such questions over the generalisability of the results for this project may arise due to the experientially unique and specific somatosensory nature of pregnant populations suffering from LBP (Palsson et al., 2015).

An earlier review of the literature compared the use of spinal manipulation and mobilisation for spinal pain and found that there was moderate evidence to suggest that OMT had a similar effect to non-steroidal anti-inflammatory (NSAID) medication. Using subject-reported outcomes such as pain intensity and functional capacity, Bronfort et al. (2004) found that the techniques, commonly applied by manual therapists, were more effective in the short term than placebo and general practitioner care. Manual therapy in this case was also more effective in the long term than physiotherapy, exercise prescription and attendance at a specialist “back school”. However as mentioned these studies were reductionist in nature in that they compared interventions which were performed largely in isolation and delivered via study-specific protocols. That the authors found that spinal manipulation and mobilisation was efficacious, over sham procedures designed to appear analogous, speaks in part to the efficacy of the techniques compared, and it does not inform comparative praxis reflective of “real-world” interaction.

Of these “real-world” interventions an interesting finding was discovered with regard to medication use. Andersson et al. (1999), in comparing osteopathic spinal manipulation with standard care, found that osteopathic spinal manipulation was equivalent to standard care regarding significant reductions in pain but significantly reduced the use of oral analgesia. This is particularly interesting when considering the range of therapies which were utilised in standard care for this study, as this involved a range of commonly prescribed treatments such as analgesia, physical therapy, ultrasound, transcutaneous electrical nerve stimulation (TENS) and supportive corsets (Andersson et al., 1999). Most of these therapies have empirical support for the treatment of LBP and it would therefore be logical to infer a contextual effect of the osteopathic interaction should the standard care group in this case comprise only one intervention such as ultrasound. However, given that physical therapy was utilised, in which a contextual (placebo) effect could be inferred due to patient interaction or positive

reinforcement within the TA, the question of what is unique or distinctive about the OC in this case arises. This is perhaps further supported by the individualised and “real world” nature of the OC. In this case as the practitioners were free to tailor treatment to the specific patients’ needs as per their osteopathic clinical reasoning. However, this study did not involve pregnant women so generalisability to PR-LP during this time is questionable.

The importance of understanding the psychological components of the experience of LBP generally is underscored by a wealth of literature which supports how the prognosis of LBP is inextricable from components of the FA model. In a review of the literature on catastrophising in low back pain Wertli et al., (2014) found that patients who exhibited higher levels of catastrophising in persistent LBP were more likely to experience delayed recovery as they engaged in behaviours such as prolonged bed rest, which is established as delaying recovery from LBP. Furthermore, catastrophising in the early acute stages of LBP has been demonstrated to predict reduced activity levels at one year of suffering (Jellema et al., 2007), which understandably drives the maintenance of suboptimal tissue health and psychological wellness inherent to the persistent pain experience. FA and negative beliefs about pain have also been demonstrated to influence the prognosis of persistent LBP. Wertli et al. (2014) reviewed RCTS which assessed these tendencies in LBP sufferers during the subacute phase (between four weeks and three months) via the fear avoidance and beliefs questionnaire (FABQ) and found that this was predictive of poorer outcomes with regard to work-related outcomes such as more sick days and not returning to work (Wertli et al., 2014). Interestingly the authors found that FA and negative beliefs in the acute and chronic (persistent) phases were mostly not predictive of poorer work-related outcomes. This may be straightforward to understand in the acute phase, given the immediacy of the threat of a new problem. However, regarding persistent LBP, this conflicts with earlier work which highlighted the role of FA as predictive of poorer outcomes in persistent LBP sufferers (Waddell et al., 2013). Furthermore, whilst FA and negative beliefs regarding pain have been implicated robustly in the prognosis of LBP, these are unlikely to be the only psychosocial factors at play. For example, in a large cohort study of 555 subjects diagnosed with LBP, Swinkels-Meewisse et al. (2006) found that higher levels of pain-related fear carried the highest predictive effect of disability and low activity levels at six months. Ramond et al. (2011), In a review of the psychosocial risk factors for persistent low back pain in primary care LBP, highlighted that pain fear avoidance and negative beliefs about pain were only predictive in approximately half of the studies which assessed these tendencies.

An interesting aspect of the therapy of osteopathy is that recent work has shown that this form of treatment, previously considered to work on primarily physical principles, may reduce psychological symptoms in patients with spinal pain (Edwards & Toutt., 2018). Edwards & Toutt, (2018) highlighted that pain levels reduced in a population of persistent pain sufferers over a two-week period whilst

receiving osteopathic treatment for a range of MSK complaints. Additionally, the authors report significant improvements in the ability to self-care as well as reductions in anxiety and mental health dysfunction. Given the significant complications and impact of PR-LP, further work should be structured around whether these findings are transposable to the condition as well as maintained over time.

3.7.3 Osteopathic Management of Pregnancy Related Lumbopelvic Pain

Earlier work, which in part attempts to address the link between manual therapy and wellbeing, has shown promising correlations between spinal manipulation (one of the many techniques used in but not exclusive to osteopathic practice) and significantly improved general health outcomes as demonstrated by EuroQol, SF-12 and Short-form McGill pain Questionnaire in a population of spinal pain patients at two and six month follow-up (Williams et al., 2003). Further encouraging results have been demonstrated with significantly reduced fear and improved patients' understanding of pain in a small sample (n=20) of patients attending a GP led osteopathic service for spinal pain (Westmoreland et al., 2007). Whilst this is encouraging for the use of osteopathy in LBP as a means to augment psychological as well as physical outcomes in LBP, the generalisability of these findings to PR-LP is unclear. Additionally, many further aspects of the FA and psychological flexibility models may play a role in the specific lived experience of pregnancy-related LBP including values and committed action, acceptance of pain, cognitive fusion within the acceptance and commitment therapy (ACT) paradigm. This also may impact psychological factors such as agency, identity, and roles; all of which are known to be important components of pain-related psychological distress (McCracken & Velleman, (2010)

Clearly, there is a link between psychological factors and persistent pain which are central to the continuation of healthy activity when the individual is faced with their pain experience. Osteopaths, working almost exclusively in autonomous primary care are positioned at the front line of managing LBP (and PR-LP) and as such have a deontological requirement to not only enshrine the importance of psychological components of the pain experience within their training and clinical management, but also to explore how these mechanisms for change are affected by the osteopathic therapeutic encounter. This is particularly relevant to the field of persistent pain, given that delay in appropriate treatment may facilitate prolonged periods of pain severity which result in the establishment and maintenance of the persistent pain state (Mansour et al., 2014).

Patient satisfaction has been demonstrated to be generally high for the osteopathic management of low back pain (Strutt et al., 2002). In addition to this, osteopathic treatment has been shown to be perceived by patients as highly efficacious which may lead, in part, to demonstrated reductions in medication use and the need for physiotherapy treatment when compared to standard medical care (Andersson et al., 1999). Given this, it is interesting to consider what aspects inherent to the

therapeutic interactions impact on fear avoidant illness behaviour and how this relates to psychological wellbeing. This further relates to the “third wave” of behavioural therapies within the currently developing ACT paradigm (McCracken & Velleman, 2010). If, for example, an osteopath demonstrates care which allows the patient to make contact with themselves as context, live in accordance with their values or engenders increases in psychological flexibility then it could be expected that pain, illness behaviour and value consistent behaviour will be more favourable than when this is not facilitated by the practitioner (Yu & McCracken, 2016). Overwhelmingly, the main reason for patients consulting osteopaths is for MSK pain, which is persistent in nature. There is, however, a lack of evidence regarding how osteopathy impacts the psychological distress which accompanies persistent pain. In the modern healthcare landscape, it is therefore essential that osteopathy seeks to identify and develop strategies which address this. Current understanding in persistent pain management, supported by a growing body of work, which highlights psychological distress in several conditions including LBP (Pincus & McCracken, 2013). Given that osteopathic training has no specific psychological training in the clinical setting and puts the practitioner in a position whereby psychologically informed strategies can be employed, or indeed negate the lack of this, it is imperative that further work be conducted to explore this aspect of the therapeutic encounter.

A significant number of pregnant women globally consult osteopaths for the treatment of LBP (Hall et al., 2011) and the popularity of this discrete clinical discipline is growing with around 30000 osteopathic appointments each day in the UK alone. Additionally, the number of the practising community approaches 6000 (GOSC, 2017). Moderate quality evidence has validated this approach in pregnancy-related LBP. However, a fuller understanding of how this treatment is truly effective remains elusive, considering incomplete data regarding the specificity of the therapy and mechanism of action of treatment techniques utilised (Lederman, 2011).

Whilst fear avoidant illness behaviour has been demonstrated to be of importance in persistent pain, the phenomenon is not stable during LBP and fluctuates within a given pregnancy (Olsson et al., 2012). It is therefore complex to understand how the therapeutic benefit of osteopathy may potentially improve aspects of this behavioural model. Further work is warranted to explore the lived experience of LBP during pregnancy and how this is impacted by the therapeutic alliance in osteopathic care.

More recently, Franke et al. (2014) undertook a systematic review and meta-analysis which examined the role of OMT in the treatment of LBP. This study built significantly on the previous work of Licciardone et al. (2005), in that the interventions included in the studies were required to be “authentic” in that the osteopathic practitioners engaged in real-world osteopathic encounters which

represented OC. This is in contrast to previous reviews which included trials which were restricted by standardised treatment protocols or other restrictions on the use of technique which would commonly fall within the remit of osteopathic practice. The authors found of the fifteen studies which met the criteria for review, twelve had a low risk of bias and moderate quality: Evidence suggested that OMT, in the context of an “authentic” interaction was effective at reducing pain and improving functional status in LBP. Of three studies which were concerned with OMT for LBP in pregnancy, one study showed a non-significant improvement in pain and functional capacity. The two remaining studies indicated “moderate” quality evidence which supported the use of OMT to achieve reductions in pain and improvements in functional status for LBP during pregnancy. The authors cited that this was downgraded to “low” quality evidence due to “inconsistency and imprecision” of not refining calculations relating to Standard Deviation of change (Franke et al., 2014). Regarding improvements in functional status in LBP during pregnancy, these studies were concerned with simple movements such as spinal range of motion, active straight leg raising in addition to Roland-Morris Disability (RMDQ) scores. Conclusions regarding the long-term impact of OMT in these studies are impaired by the short duration over which the studies ran, or followed up the cohorts, as the longest of the RCTs reviewed had a duration of 10 weeks.

However, a recent randomised controlled trial of 144 pregnant participants in America (Liccardone et al., 2013) investigated the use of OMT in the treatment of LBP and related symptoms specifically during pregnancy. The authors found that OMT significantly reduced LBP during the third trimester of pregnancy in addition to favourable results when compared to usual obstetric care and sham ultrasound in terms of reducing the deterioration of disability related to back specific functioning, as measured by Roland Morris Disability Questionnaire (RMDQ) scores. This study also utilised a standardised OMT approach which encompassed four types of manual technique applied in a systematic protocol which were deemed suitable for pregnant women. Whilst this study demonstrates encouraging results, the technique restrictions may not necessarily capture the range of therapy contained within an osteopathic treatment such as patient education, positive reassurance and advice, but given the remit of this RCT the results are encouraging. Additionally, this study was performed in America, where osteopaths are by law medical doctors. As such, specific relevance to UK osteopathic practice may be impacted by differences in both methods of intervention and contextual effects which potentially differ across nations.

Franke and colleagues recently conducted further work specific to osteopathic treatment and LBP. Via systematic review they found that in a review of 102 studies for pregnancy related LBP, osteopathic treatment resulted in significant effect on decreasing pain and disability in five studies. This study also

identified three studies which had similar effects in post-partum patients (Franke et al., 2017). Although, clinical efficacy in the post-partum stage is not immediately relevant to this review.

3.8 Discussion

A specific sensitivity to MSK pain has been demonstrated during pregnancy which comprises both physiological and psychological aspects of the experience of pain during this time (Palsson et al., 2015). The phenomenon of PR-LP is considerably more prevalent than other types and locations of pain during pregnancy yet a complete understanding as to the aetiology of this debilitating and economically significant condition is lacking. It is interesting to note that cultural understandings of the experience of PR-LP may contribute to under-reporting of the condition in that it is expected or considered to be normal during pregnancy (Wang et al., 2004). These cultural issues also may be compounded bi-directionally via poorer understanding of the phenomenon of PR-LP by primary healthcare professionals such as GPs which lead to dissatisfaction amongst sufferers of the condition (Close, 2016). Whilst it is true that back pain in general is a common feature of pregnancy, normalising all PR-LP during pregnancy may lead to a failure to engage with appropriate management in a timely fashion which interrupts the progression to persistent pain. Given the significant level of suffering and psychological distress which can be associated with PR-LP, there is a strategic priority to develop cost effective interventions which can reduce the burden of disease of the condition.

The BPS model of health has gained significant acceptance within the field of MSK care and as such has gone some way to understanding of how aspects of psychological distress may represent component parts of NSLBP in general. Fear related anxiety and beliefs such as catastrophising, an irrational thought that pain is worse than it is or signifies significant damage to bodily tissues, has been linked to the prognosis and functional capability of NSLBP (Woods et al., 2008). This process has been shown to lead to illness behaviours, such as hyper-vigilance, which cause the sufferer to avoid healthy activity which is necessary for healthy psychological and physical functioning and subsequent recovery (Waddell, 1993). These behaviours which sit within the established FA model are correlated with poorer clinical outcomes generally and delayed recovery which together carry an increased propensity towards the establishment of persistent pain (McCracken & Velleman, 2010).

These concepts have been particularly useful in informing clinical management of a condition which previously long-held biomechanical theories did not fully explain (Vermani et al., 2010). However, these behavioural aspects of the persistent pain experience arguably do not capture the fullest possible picture of the experience of pain, largely since their presence is elucidated by quantitative scoring measures of psychological wellbeing. This is not to say that there is not merit in quantitative scoring measures. However, given the multidimensionality of the pain experience, the construct

validity of measures is likely suboptimal with regard to understanding the fuller meaning and context of an experience.

Less however is known about phenomenon of PR-LP from a psychological perspective. Preliminary work has demonstrated catastrophising to feature in the clinical picture of the condition (Olsson et al., 2012). This is to be expected as this behaviour is present in NSLBP and despite some etiological variance regarding mechanical aspects for pelvic pain, PR-LP is generally regarded to be a form of non-specific pain, which eludes a definitive structural diagnosis in most cases (Franke et al., 2014). Whilst there is empirical support for FA illness behaviour in the phenomenon of PR-LP, most of this is cross-sectional in nature and as such does not reflect the lived experience of PR-LP as pregnancy develops. Additionally whilst concepts such as self-enmeshment (Sutherland & Morely, 2008), mental defeat (Tang et al., 2007), loss of self and agency (Pincus et al., 2013) have been demonstrated to be significant aspects of the experience of persistent pain, little is known about how these constructs affect patients during the unique time of pregnancy and how these experiences interact with HrQOL, which has been empirically demonstrated to be vulnerable during pregnancy, predominantly when women experience PR-LP (Setse et al., 2008)

PR-LP remains a significant problem socially, personally and from a healthcare resource perspective. The FA model has been demonstrated to have a significant mediating role in LBP amongst the normal non-pregnant population of LBP sufferers. However, further work which explores how these behavioural constructs may specifically affect PR-LP is warranted. This is due to the socio-cultural aspects of pregnancy-related back pain and how this may affect individuals living with the condition from seeking care at times which are optimal to engage with treatment (Wang et al., 2005). This is of particular importance given the persistent and recurring nature of LBP, a persistent state of which may be reached far earlier than conventionally considered (Kovacs et al., 2005), and how LBP during pregnancy is predictive of poor health outcomes before, during, and after partuition (Noren et al., 2002).

Pregnant women suffering from PR-LP have been shown to be generally unsatisfied with primary care of PR-LP (Close et al., 2016) as well as suffer from significant disability and psychological distress which can cause increased dependence on family members, which can lead to strain on these relationships. (Persson et al., 2013). Additionally, a growing body of work highlights that PRLP is associated with negative relationship satisfaction (Bergström et al., 2014), fear around birth (Elden et al., 2013) and negative emotions such as anger and frustration (Mackenzie et al., 2018). It is unsurprising therefore that this population shows a relatively high level of CAM and allied health usage (Hall et al., 2005). Within the healthcare landscape of the UK a predominant allied health

profession which is involved with the treatment of back pain is osteopathy. Osteopathic treatment has been shown to have significantly positive effects on levels of pain and disability in LBP (Franke et al., 2017; Liccardone et al., 2003). However, less is known about how aspects of the therapeutic interaction in osteopathic care act as mediators of change for the psychological distress which accompanies PR-LP and back pain in general. Given that osteopathic treatment demonstrates moderate effects in alleviating the physical symptoms of PR-LP, there exists a need to explore what is happening here with a view to strengthening the positive impact that this approach may have on the condition from a broader psychological perspective. This is particularly relevant to the current UK healthcare landscape considering strategic priorities for cost effective interventions (Bevan Commission, 2008) and the significant burden which PR-LP represents to sickness absence and health care costs globally (Morgen, 2006; Olsson et al., 2002).

Osteopathic principles regarding managing PR-LP are widely regarded by the profession to be patient-centred. Support exists for the focus of management to utilise a manual therapy approach which is cognisant of the changing demands on the musculoskeletal system as the mother's body adapts to the physical and physiological challenges of advancement through the three trimesters (Franke et al., 2017; Majchrzycki et al., 2010). Much of the professional literature posits that this holistic approach is patient-centred due to an understanding of the physiological changes which accompany pregnancy such as increased membrane permeability in the sinuses, changes in joint laxity and physical stress on organ systems such as the upper gastrointestinal system due to the increasing size of the developing fetus. In addition to this, many popular osteopathic texts which are central to undergraduate training in osteopathic educational institutions (OEs) highlight the concept of regional interdependence of distinct but physically connected anatomical regions (Sueki et al., 2014). For example, and in praxis, management of LBP during pregnancy may be considered (from an osteopathic viewpoint) to be defined by the practitioner assessing mechanical stresses and strains in another region of the spine or pelvis or perhaps the joints and muscles of the lower limb, and applying osteopathic techniques to normalise or "spread the mechanical load" across the musculoskeletal system (GOSC., 2017).

However, considering advances in psychological understandings of the pain experience over the last century, this perspective, as a holistic ideal, is vulnerable to criticism. Osteopathy is a small profession by comparison to similar disciplines such as physiotherapy and much of the specialised osteopathic grey literature which is integral to undergraduate and postgraduate training is principally concerned with the application of osteopathic clinical reasoning from a mechanistic approach rooted firmly in the anatomy and physiology of structural dysfunction of the body (Lunghi et al., 2016). Whilst osteopathic principles are ideally held to be rooted in the osteopathic "triad" which highlights the inter-relatedness of mind, body and spirit, the principles in all iterations including the most recently updated, are

arguably focussed on anatomical relationships (Fawkes et al., 2014). Given this, it is unsurprising that there is a significant lack of empirical support for osteopathy's effect on psychological measures of distress which are integral to the pain experience (Williams, 2007). This presents an epistemological challenge to the profession and its continued contribution to persistent pain conditions. Considering that osteopathic patients often present with persistent pain and osteopaths are not typically trained to detect or address these aspects, it is logical that addressing the lack of empirical research which demonstrates how the psychological components of patients' pain experience can impact aspects of fear avoidance, wellness and illness behaviour and within an osteopathic setting.

As previously mentioned, systematic reviews have demonstrated some utility of osteopathic care in improving pain and functional status in pregnant populations (Franke et al., 2014). The perceived benefit of osteopathy is generally accepted to be present at three months post-treatment. However less is known about how long this perceived benefit can last as well as what aspects of osteopathic treatment are responsible for maintaining these improvements. This is particularly important given that the techniques employed by osteopaths differ very little from those used by sister professions of physiotherapy and chiropractic and indeed are not physiologically understood to have significant lasting benefit (Hoving et al., 2006): nor is a clear dose-response relationship established for osteopathic treatment.

Increasingly, in the modern healthcare landscape, attention has been given to the subject of contextual effects (CEs). CEs are aspects of the therapeutic encounter other which promote change in addition to the perceived benefit of the intervention itself (Miller & Kaptchuk, 2008). This concept goes some way in understanding what factors could be facilitating the placebo (or indeed nocebo) effects of interventions used in persistent pain management. Additionally, in the clinical setting, these factors may impact the way in which the patient feels about their condition and thus how they navigate the lived experience of their pain.

Specific to osteopathic treatment, little is known regarding what aspects of this therapy consistently represent good practice and what aspects of treatment represent factors which could be modified to improve clinical outcomes. Given the scale of PR-LP and how this condition can affect women long after they have given birth to their children (Olsson & Nilsson-Wikmar, 2004) further work which builds on the established benefit of osteopathic care and adds context to what is happening as a result of treatment is required.

3.9 Update to relevant Literature following Completion of the Project.

This literature review was completed prior to 2018. As such some key developments have occurred which have relevance to the findings of the project, regarding the lived experience of PR-LP. Cęprnja

et al. (2023) in an analysis of beliefs around PR-LP in healthcare professionals (midwives and doctors) found that healthcare practitioners confirmed the presence of severe pain which was disabling and distressing. This further consolidates previous work (Close et al., 2006; Persson et al., 2013) and may add to the findings of Study 1 (Chapter 5, Section 5). What is of note is that these same healthcare practitioners reported not prioritising PR-LP when involved in the care of pregnant women due to competing clinical demands. This consolidates the work of Close et al., (2006) whereby women reported dissatisfaction with allopathy during PR-LP. This has relevance to aspects of Study 2 whereby osteopaths, in part, established their TA via “reframing the advice of others” and its overlapping themes (Chapter 6, Section 7.1.3). However, generalisability cannot be immediately assumed as the work of Cernja et al. (2023) was conducted within the Australian healthcare infrastructure and may not be representative of practitioners’ experience in the UK.

Significant and further work has also been produced which increases the depth of understanding which is of relevance to the mechanisms underpinning therapeutic touch in OC. A recent narrative review (Baroni et al., 2021) focused on touch in OC and advanced a hypothesis based on the findings. The authors conceptualise touch, as a component of OC, as working to increase collaborative dialogues in care. This has relevance for the reported findings of Study 2 (Chapter 6) and its related finding Study 3 (Chapter 8) where osteopaths discussed at length the complex nature touch had in OC as a mediating factor which strengthened communication and conveyed contextual empowerment in the management of PR-LP. Furthermore, Stillwell and Harman (2019) have conceptualised a model of “enactive care” which aims to address potential inadequacies of the BPS model in the context of lacking sophisticated detail as to individualised care. From this Esteves et al. (2022) have advanced a model of active interference which draws on advances in neuroscience to illustrate how human behaviour is based on inferences about sensory inputs, cognitions, beliefs, and prior experiences of engagement with the world that they live in. From this concept it may be extrapolated that the synchronous nature of touch and communication in OC augments care in previously not understood ways (Chapter 8, Section 5.7).

3.10 Limitations of Literature review

This literature review aimed to understand both how PR-LP affected individuals living with the condition across a range of life domains and how OC may impact the condition and subsequently the lives of those individuals. Within this several potential limitations arise which should be considered and reflected on within the nature of the review itself and this PhD project. Initially, a pragmatic approach was attempted for this review but due to the breadth of the review’s aims and questions this

was not feasible. This was due to the fact that pragmatic reviews, like systematic reviews are more amenable to a narrow, in-depth question (Crowther, 2013). A key difference, being that pragmatic reviews adapt aspects of the search strategy (e.g eligibility criteria and search parameters (York Health Economics Consortium, 2016). This review, by contrast reviewed findings from a range of areas of literature which were not inherently linked by large amounts of related empirical findings. For example, less is known regarding how OC may impact psychological distress in patients generally, and specifically regarding PR-LP. For this reason, a narrative review format was utilised and as such this raises potential limitations of narrative reviews discussed below in relation to this review.

My own subjective bias as an osteopathic clinician, educator and researcher may have impacted the interpretation of findings within the review. This is an understood limitation of the narrative review format (Byrne, 2016) and could have led to a less than complete synthesis of findings. This could have been further impacted by myself acting as the sole researcher in the narrative review. Gasparyan et al. (2011) state that up to five reviewers may be suitable for a narrative review and that this may add specific quality based on the diverse knowledge and considerations which are brought to the review process by multiple reviewers. However, the adaptability of the narrative review structure did lend itself to a more flexible approach at synthesising the data across several fields of enquiry.

Using the narrative review format could further influence the nature of transparency and reproducibility in this review. My own decisions and critical judgements of what to include may have been influenced by being conversant with a large amount of osteopathic grey literature which formed my own education and acted as reference points to the students I had trained over a fifteen-year period as an educator. Whilst only a very small selection of this grey literature has been included in this review, an exposure and familiarity to this literature could potentially influence the course and direction of the review when compared to a team of reviewers who were not osteopathic clinicians or educators.

As this narrative review attempted to explore a range of areas of professional practice which encapsulated the overall research questions of the doctoral project this could have led to a less than complete literature search. This is a known weakness of narrative reviews when compared to pragmatic or systematic reviews (Byrne, 2016), and on reflection I consider that attempting the narrative review format may have been ambitious and could have been addressed via other review-style formats which were also amenable to the research questions at hand (please see section 9.7 for further detail). Furthermore, the difficulties associated with combining qualitative and quantitative findings as well a lack of standardised approach in synthesising these together (Bednarz, 1985;

Forshaw, 2007; Ogborne, 1995) may have impacted the clarity of findings and recommendations from the literature review.

Chapter 4. Methodology and Methods

4.1 Introduction

This chapter describes and justifies the methodology of the doctoral project. To address the research question and aims, this project comprised three studies. These studies used and applied different methodological approaches. For example, in Study 1 an interpretative phenomenological approach (IPA) (Smith & Osborn, 2003) was taken whereas in Studies 2 and 3 a reflexive, inductive thematic analysis approach (Braun & Clarke, 2006) was used. All three studies used semi-structured interviews to research different participant populations, which were selected in accordance with the aims of the given study. Study 1 used individual participant interviews, whereas in Studies 2 and 3 focus group research was used. This was done in accordance with the specific aims of the Study at hand (discussed below). This chapter details the underpinning methodologies used in the project (see Fig 4.2 for an overview). Reflexive methodological decisions taken by at each point of the project are reported in Chapter 2 and at the start of the empirical chapters of this project (Chapter 5, Section 3; Chapter 6, Section 3.1; Chapter 8, Section 3). This methodology chapter also discusses the ethical considerations and processes relevant to this research.

4.2 Aims of Research Project

4.2.1 Study 1

The aims of the first study were twofold. Firstly, using IPA, the impact of PR-LP on the lived experience of pregnant women was explored. This approach was used to understand how the experience of PR-LP impacted both the psychological and physical aspects of the women's' lives.

Secondly, the impact of osteopathic treatment on the women's' lived experience was explored. This was done to gain a deeper insight as to how the women made sense of the therapeutic characteristics of this increasingly popular therapy and how this mediated transitions towards clinical changes in PR-LP.

4.2.2 Study 2

Following on from Study 1, Study 2 aimed to explore in more detail, what may be occurring within the therapeutic interaction in OC that may be attributable to establishing improvement in PR-LP. Thematic understandings of how osteopaths make sense and assign meaning to their actions, language and communication within the clinical setting were explored to gain insight into the collective understanding of therapeutic interaction and alliance in OC during the management of PR-LP. Greater understanding was sought for the identification of good practice which may be influencing women suffering from PR-LP and facilitating the rapid transition from the persistent pain state to normality, reduced disability, and re-engagement with pain free living. Thematic analysis (Braun & Clarke, 2006)

was used to analyse the data in this study and construct the underpinning theory which informed the final Study (Study 3).

4.2.3 Study 3

Following on from Study 1 and Study 2, the third study (Study 3) used thematic analysis of focus group research from a panel of UK osteopathic practitioners to explore the findings from Study 1 and Study 2 in relation to a drafted clinical toolkit (Appendix 22) which was developed from the data of the preceding two studies (Chapter 7, Section 1). The aim of this was twofold. Firstly, this study sought to confirm the validity of the findings of the previous two studies in the context of agreement within the professional community of osteopaths. Secondly, this study aimed to explore the feasibility and relevance of the findings in relation to impacting future osteopathic clinical guidance, training, and research. Thematic analysis was used to construct further codes in relation to the research aims (Appendix 22). However, the nature and direction of the data from this interview were, upon completion, more amenable to reporting concordance and related discussions from this professional group of UK osteopaths (See Chapter 8, Section 5)

4.3 Development of Focus Group Questions and Clinical Toolkit

Due to the exploratory nature of the project, at each stage the preceding study informed the development of the next study. For example, having established the lack of specific knowledge regarding the lived experience of PR-LP and the need for understanding how OC impacted the condition of PR-LP, the first study was designed by a reflexive process with regard to its semi-structured interview questions (Fig 5.1) and validating processes (Fig 2.1). Following this, the findings of the second study were developed by a reflexive process with regard to its semi-structured interview questions (Fig 6.1), Validating processes (Appendix 11) and approval via Supervisory team (Fig 2.1).

The findings of these two studies then, via a reflexive process, informed the development process of the Clinical Toolkit (Appendix 21) for use in Study 3 (Appendix 22) and its accompanying semi-structured interview questions (Fig 8.1) which were used in the final study of this doctoral project. Please see below (Fig 3.1) for a visual schematic of this process.

Figure 4.1 Study Design flow diagram

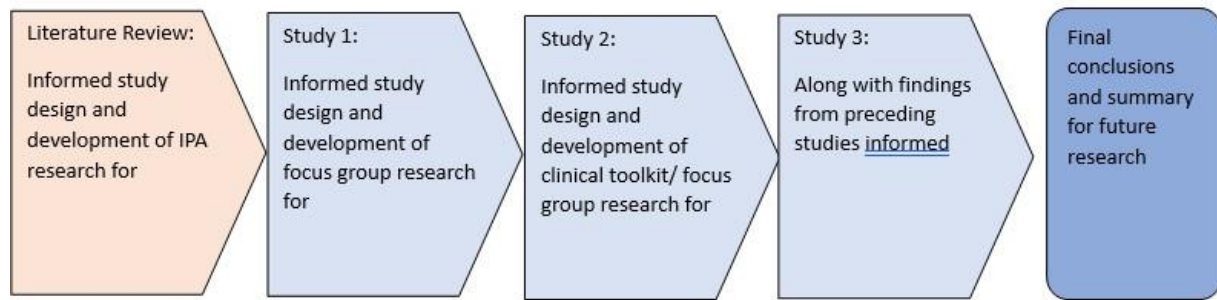


Table 4.1 Summary of Methodologies Used in this Project

	Study 1	Study 2	Study 3
Method Utilised	IPA	TA	TA
Population	(n=6) Individuals living with PR-LP within last 6 months.	(n=21) UK registered osteopaths with experience of managing PR-LP (arranged for level of experience across 3 groups of 5-8 participants).	(n=6) UK registered osteopaths with experience of managing PR-LP.
Epistemology /Justification	Ideographic: In-depth world view of participants.	Reflexive/Inductive: Deeper insight into professional praxis, theory, and nature of TA.	Reflexive/Inductive: Exploratory validation of findings across Studies 1 and 2 via collation of personal/professional views of “professional panel” of osteopaths.

4.4 Ethical Approval

Each of the three studies which comprised this project were subject to ethical approval via Swansea University’s internal ethical committees. Ethical approval consisted of a drafting of the relevant ethical applications, review by supervisory team and submission to the respective ethical committee(s).

Following this, in each case minor changes were addressed via Chair's action. Ethical approval for Study 1 was obtained via Swansea University College of Human and Health (CHHS) Research Ethics Committee on 20/07/18 (Appendix 5). Ethical Approval for Study 2 was obtained via The CHHS Research Ethics Committee on 22/04/21 (Appendix 12). As part of the data collection for Study 2, another osteopathic educational institution was approached to disseminate the invitation to participate in research (amongst its staff and professional community. Ethical approval was obtained for Study 2 via this external institution on (06/08/21). Study 3 was awarded ethical approval via (Swansea University Research Ethics Committee on 24/10/24 (Appendix 18)

The research used in this project was inherently low risk due to being solely focussed on asking individual participants for their views. This research did not involve invasive procedures or work with children or vulnerable adults. However, no study involving human participants is entirely without risk and this project had in place measures to guard against this. The primary potential risks of the research were twofold. Firstly, the recounting of painful experiences by the participants of Study 1 could potentially have exacerbated psychological distress associated with their pregnancy or related pain. Secondly, when exploring the views of a professional community the possibility of professional misconduct being declared unconsciously arises. When the interviews were originally planned to be held at the Swansea University HWBA, onsite counselling was planned in case of this. Due to the conversion to online interview (Chapter 7, Section 1), this was replaced with standard debriefing procedures and the opportunity to wait post-interview and ask any further questions about the study or interview. (Secondly, when exploring the views of a professional community the possibility of professional misconduct being declared unconsciously arises Within the Ethical submissions, detail of reporting misconduct or malpractice to the GOsC was supplied.

4.5 Theoretical Basis of Methodologies Within this Project

4.5.1 Qualitative Research

Qualitative Research in Healthcare is an important tool for understanding the intricate human experiences, perspectives, and behaviours that shape healthcare practices and outcomes. Qualitative approaches provide context and depth of understanding to phenomena that quantitative methods may overlook. This can offer insights into the subjective aspects of health and illness which relate to human experience (Al-Busaidi, 2008). Qualitative research delves into the lived experiences of patients, allowing for the exploration of perceptions, emotions, and beliefs regarding illness. This can allow for an exploration of the lived experience of treatment, and healthcare services. Through methods such as interviews, focus groups, and observation, researchers can uncover nuanced insights that inform patient-centred care and improve patient satisfaction (Braun & Clarke, 2019; Braun & Clarke, 2022).

Qualitative research strategies can also be used to gain understandings of healthcare providers' perspectives which relate to specific conditions and the nature of treatment approaches. This provides insight into clinical decision-making, communication practices, and interprofessional collaborations. Understanding these aspects of care can enhance the quality-of-care delivery and support healthcare professionals in addressing patient requirements (Hsieh & Shannon, 2005). Furthermore, qualitative research contributes to evidence-based policymaking and healthcare practice by uncovering social, cultural, and organizational factors that influence health outcomes. Sandelowski (2000) highlights that by examining contextual factors, such as socioeconomic status, cultural norms, and institutional practices, qualitative studies have also been used to provide insights for developing interventions, programmes, and policies that serve the needs of populations and promote equity of healthcare provision. The specific aims of this research were to explore the lived experience of PR-LP and the impact that OC had on the lives of people living with the condition. Furthermore, the research aimed to explore understandings of how osteopaths made sense of and established the therapeutic alliance (TA) in their management of PR-LP. For this reason, qualitative strategies were applied throughout the entirety of the project as this reflected the exploratory nature of human experience and sense making required of the research question.

4.5.2 Researching the Experience of Pain

Over the last 30 years or so a significant expansion in the variety of research methods used by psychologists has occurred. This has resulted in the so called "paradigm wars" where much debate has questioned the validity of the two principal methodologies of research: quantitative and qualitative (Biggerstaff & Thompson, 2008). Proponents of both types of research have criticised the other approach and this has led to a range of authors to take the position that these frameworks of enquiry are inherently opposed to each other (Bednarz, 1985; Forshaw, 2007; Ogborne, 1995). Quantitative research strategies relevant to the psychology of pain often take the form of quantitative scoring systems used to assess level of pain and related illness behaviours consistent with poorer progression such as catastrophising (Sullivan et al., 1995) fear avoidance-related components (Neblett et al., 2016) or the overarching concept of psychological flexibility which has seen a recent emergence as an underpinning construct in the wellbeing of individuals which suffer from persistent pain (Kashdan & Rottenberg, 2010). These forms of enquiry are rooted in the positivist, interpretative reasoning tradition which maintains that the world is an objective system that is amenable to study through scientific methods. Qualitative research by contrast, concerns itself with the reflexive inductive reasoning traditions and conceptualises the world as a social construction that cannot be fully understood via standard empirical enquiry alone (Bailey et al., 2009). Quantitative research therefore focuses on numerical data and statistical analysis to establish relationships between phenomena,

whereas qualitative research uses non-numerical data such as interviews and reflexive observations to explore meaning and relationships between phenomena (Kandel, 2020). Regarding pain research, this type of enquiry often uses a broad remit of techniques which aim to understand the specific nature of a problem or lived experience from the sufferer's perspective (Braun & Clarke, 2006; Braun & Clarke, 2019). Central to the inductive perspective is how meaning and reality are constructed. This is often at odds with positivist approaches which attempt to define the nature of things in terms of objective truth (Roth & Mehta, 2002).

Within the field of psychological research, arguably, quantitative methods traditionally predominated. However, recent decades have seen an increase in the use of qualitative research in psychology. This is reflected by the American Psychological Association (APA) (2006) Presidential Task Force (2006) which encouraged psychologists to base their practices on the best evidence available. The APA stipulated that this should include a wide range of evidence which is inclusive of clinical observations, case studies, qualitative methods, randomised controlled trials (RCTs) and meta-analyses (Biggerstaff & Thomson, 2008).

This wider acceptance of diverse methods in psychological research has also seen the combining of qualitative and quantitative methods in the same research project or study. Broadly, this mixed methods research is considered to be advantageous as the perceived inherent weaknesses of both forms of research are sometimes thought to be bolstered by the strengths of both approaches. For example, quantitative research, whilst a generally good indicator that findings may be generalisable, lacks the understanding of context in which the data is collected, and this may be an important weakness when exploring how patients cope with their conditions. Qualitative research, alternatively, may include biases, is complex to statistically analyse and lacks generalisability (Foss & Ellefsen, 2002). This lack of generalisability may become problematic when analysing data as to how patients respond to therapeutic approaches. It is logical to see therefore, that adopting a mixed methods approach is sometimes considered to provide a more comprehensive understanding of a particular research question.

That said, mixed methods research has received significant criticism in the field of research methodology. This approach is considered to be beneficial via the integration of clear qualitative and quantitative strands of research which aim to address complex research aims and questions. (Tashakkori & Creswell, 2007). Strong advocates of both have taken polemic positions which state that the two forms of research are incompatible and cannot run alongside each other in the same study due to fundamental differences between the ontology and epistemology of the underpinning

methods. This divide within the field of psychology has been known as the incompatibility thesis (Howe, 1988). The debate that mixed methods research is inferior continues in the present day and is fundamentally characterised by purists of either side asserting that quantitative and qualitative methodologies effectively cancel out the construct validity and inherent worth of either when utilised together (Maxwell, 2016). For example, the purist qualitative position (the proponents of which are known as constructivists or interpretivists) argues that research without a human context is of little utility (Johnson & Onwuegbuzie, 2004). By contrast, combining the philosophies of these positions regarding quantitative and qualitative findings is considered by some to lead to research which lacks validity (Bednarz, 1985; Simpson & Eaves, 1985).

4.5.3 Phenomenological approaches to research

Central to understanding the interpretivist viewpoint is the philosophical concept of phenomenology. Phenomenology is a philosophical approach which rose to prominence in Germany prior to World War 1. This approach concerns itself with the nature of experience and as such challenged the pre-eminent opinions on the nature of truth at the time (Wojnar & Swanson, 2007). The term “phenomenology” was first used in 18th century by philosophy writers, particularly Immanuel Kant (Paley, 1998). The concept was seen as an opposing view to the naturalist tradition which concerned itself with the observable and objective universal laws of nature. However, this did not achieve mainstream attention until the German philosopher and mathematician, Edmund Husserl founded the philosophy of the descriptive approach to inquiry (Benoist, 2003).

Significantly, Husserl’s position was that consciousness was the condition of all human experience and that only by overcoming personal biases could we achieve a state of pure consciousness. Husserl asserted that this was achievable via a process of “bracketing”, whereby the observer (to a given phenomenon), consciously and actively attempted to separate the observed phenomenon from the world and to inspect it in the light of actively removed prior and experiential knowledge (Wojnar & Swanson, 2007). Husserl believed that in doing this it would be possible for humans to view and understand the commonalities of any lived experience.

The work of Husserl was disputed and further adapted by one of his students, Martin Heidegger, who viewed phenomenology as a method of understanding the meaning of being, rather than a way of being, which did not attempt to remove preconceptions and experiential knowledge. Indeed, Heidegger considered the context within which phenomena occurred as central to its understanding. As such Heideggerian phenomenology is based on the understanding of individuals and does not occur

in isolation of their culture, social context, or historical period in which they live (Campbell, 2001; Draucker, 1999).

Phenomenological approaches are currently seeing an increase in popularity within healthcare research. Whilst osteopathy has shown some increased uptake of qualitative approaches in general (Thomson et al., 2014) and indeed, as has the related profession of physiotherapy (Gibson & Martin, 2003), the implementation of qualitative approaches, particularly phenomenology over the last two decades is seen significantly in the field of nursing (Lopez et al., 2004). Given that the relatively new-found importance of patient-centred healthcare has moved away from the positivist biomedical model towards a more biopsychosocial model, it is perhaps not unsurprising that the popularity of phenomenological approaches has increased. And, as professions which concern themselves with subjective suffering and patients' psychological wellbeing, a refocusing of methodology which may explore the lived experience has occurred. That nursing phenomenology has seen such popularity may be due to the fact that the nursing model of care champions patient-centeredness, and as a result, seeks to understand the multivariate and complex nature of human experience during care. However, this is not to say that phenomenology in healthcare is exclusively the domain of nursing, as the underpinning philosophy is not dependent on the nuances of professional difference: rather, the relevance of the philosophy to how healthcare practitioners implement phenomenology as a research method.

McConnell-Henry et al. (2009) state that the framework of phenomenological research in healthcare may be at odds with both the fundamental concepts of both Husserlian and Heideggerian approaches: this is principally believed to be because neither approach offers a research method per se. Rather, each approach is underpinning philosophies which attempt to reflect of the nature of existence (Paley, 1997). McConnel et al. (2009) further elaborate that Husserl's concept of epoché or "bracketing-out" of preconceptions, required to formulate data, is virtually impossible for the practising professional. This is because healthcare professionals have a wealth of discipline-specific knowledge and will therefore view the data from the perspective of this specialised knowledge and not be able to gain insights which are unaffected by nuances which this provides. In a similar manner, Heideggerian perspectives of nursing research have been criticised by authors who speculate that the specialised knowledge and experience of "being in the world" of their chosen profession will taint the data generated from the specific field of study as they will find it difficult to remove themselves entirely from the wealth of experience obtained in the clinical setting (Draucker, 1999; Paley, 1998).

By logical extension, other forms of healthcare research, when researched by the practitioners at the heart of varied disciplines, could be amenable to tainting of the data by the complex experiences and

knowledge of the researcher. This has led some to suggest that the phenomenological data is little more than a “recounting “of events. However, despite criticism of Heideggerian phenomenology, the concept retains support as an underpinning philosophical framework for the study of lived experience in healthcare research.

4.5.4 Use of IPA in Healthcare Research

IPA has so far been used in a range of healthcare topics not limited to but including quality of life measurement (Hollmes et al., 1997), dementia (Clare, 2003) and chronic illness (Osborn & Smith, 1998). The approach also has been used to explore how healthcare professionals and therapists implement models of care (Carradice et al., 2002). Given the increased attention which the biopsychosocial model has received in healthcare it is perhaps unsurprising that IPA has seen an increase in popularity due to the method’s proposed ability to provide an alternative to deductive assumptions of mainstream health psychology. Reid et al. (2005) consider that IPA’s ability to gain access to lived experience is due to its realist ontology which focuses on the interpretation of phenomena and is superior to other forms of qualitative analysis such as discourse analysis (DA). The perhaps subtle but significant difference between these two forms of analysis highlights the uniqueness of IPA, in that DA uses recording of linguistic constructions and therefore present a descriptive account of phenomena which is textual in its ontology and as such abstract from the lived phenomena. IPA by contrast is centred on the real world meaning of phenomena via a realist ontology which may bridge the gap between research and practice as implementable platforms for therapy are unveiled (Golsworthy & Coyle, 2001).

Methodological criticism of IPA has predominantly focussed on the relative lack of depth that the approach is perceived to have. Madill et al. (2005) state that it is one of the least demanding methods in qualitative psychology and can often result in findings that are “simply descriptive”. This idea is thought to arise from the relative freedom and flexibility that characterises the approach. Larkin et al. (2006) contest this theory and highlight that despite this accessibility; all qualitative methods are prone to poor execution if the researcher remains uncritical and unsupervised in their endeavour. The authors extrapolate that central to the process of revealing the lived experience in IPA is the concept of “giving voice” to the participants and “sense making” of the reported phenomena, and when observed appropriately, then the method can provide important contextual insights to the lived experience of specific groups.

The first concept of “giving voice” to the participants hinges on a meticulous and intensive recording of verbatim accounts of experience which are captured via semi-structured interviews. Through doing this the researcher attempts to discover key “objects of concern” (Pietkiewicz & Smith, 2014). This process is initially done to capture what the nature of the participant’s life is like. Gaining access to

experience is complex, and a truly first-hand account of an individual's perspective is never truly accessible (Smith & Osborn, 1996). However, IPA does not concern itself with complete objectivity, rather it proceeds under the understanding that the account is constructed by participant *and* researcher (Larkin et al., 2006).

The second concept of "sense making" relies on the researcher approaching the account of the participant's experience and engaging with their own knowledge to draw on and make cautious inferences from the discursive, affective and cognitive phenomena which present themselves (Smith, 1996). In this way the researcher can attribute inferences which interpret the data from the researcher's own understanding of the social and cultural context of the world we live in. The phenomenological component of IPA is seen when the researcher draws reflectively on their own experience and attempts to unveil meaning and commonality beyond that which is understood prior to this interpretation. This theoretical framework is considered to go beyond the participant's own terminology and conceptualizations and as such subscribes to Heideggerian phenomenology in that the phenomenon at hand is given maximal opportunity to reveal itself "as itself" (Larkin & Thompson, 2012).

4.5.5 Justification for Use of IPA Within This Project

To understand the lived experience of women suffering from PR-LP, a phenomenological approach was used at the outset of this project. Gaining access to the worldview of the participants was considered important in order to understand the lived experience of participants in Study 1. Understandings which would stem from this were necessarily interpretative and epistemological in nature and as such a Heideggerian phenomenological approach was used. This contrasts with a Husserlian approach which is ontological in nature (Mackey, 2005) and therefore would be unsuitable when attempting to interpret the meaning of the participants' lived experiences as the focus of the data collected would ultimately be descriptive and give less insight into the relatedness of the sufferer of PR-LP and their contact with osteopathic care. I selected the research method of interpretative phenomenological analysis (IPA) as the underpinning theory of this approach to allow me to gain access to the worldview and nuances of experiences of the individuals' lived experiences in question (Larkin & Thomson, 2012).

IPA is a relatively new form of analysis in psychological research and is gaining increasing popularity for its ability to engage with a particular problem at an idiographic level (Reid et al., 2015). IPA was developed by the psychologist, Jonathan Smith, to allow for in-depth exploration of the subjective experience and cognitions of specific idiographic groups (Biggerstaff & Thomson, 2008) and as such, the theoretical basis for exploring lived experience (Smith & Osborn, 2015). The process typically takes the form of a semi structured, in-depth interview whereby the researcher asks a series of loosely

structured questions designed to gain access to the lived experience of the participant. During the interview the researcher may use prompts and “probes” to allow the participant to explore further their experience.

4.5.6 Thematic Analysis

Thematic analysis is a type of qualitative analysis used in health psychology and other social sciences, as it allows for in-depth exploration of individuals’ lived experiences (Boyatzis, 1998; Roulston, 2001). Despite its diverse use within psychology, it is surrounded by some controversy. Boyatzis (1998) defines TA as a “flexible tool” which can be used across different qualitative methods. Ryan & Bernard (2000) on the other hand, describe thematic analysis as a process which belongs within more formalised qualitative approaches, such as grounded theory. In addition, Braun & Clarke (2006) claim that TA should be recognised as a distinct method. Nevertheless, the consensus is that the main strength of TA is its flexibility. Another strength lies in its applicability to a range of approaches, unlike methods which are tied to specific theoretical or epistemological positions (Riessman, 2008). In fact, TA can allow for variability and application within different theoretical frameworks as it lacks a fixed procedure, in contrast to other qualitative methods such as conversation analysis and IPA (Hutchby & Wooffitt, 1998; Smith & Osborn, 2003). For this reason, some authors consider TA theoretically and epistemologically independent and therefore compatible with various paradigms within psychology (Aronson, 1994; Roulston, 2001). A good example of its versatility is that TA can be adapted and applied to essentialist and constructionist perspectives, whilst remaining associated with realist or experiential approaches (Riessman, 2008).

4.5.7 Justification for Use of Thematic Analysis in This Project

In understanding the choice of thematic analysis for this project it is important to first examine the different types of thematic analysis that are available to researchers. For example, thematic analysis is broadly divisible into two main types. These are colloquially referred to as either “small Q” or “big Q” approaches, reflecting the extent to which there are exclusively “qualitative” (Kidder & Fine, 1987). For example, “small Q” approaches may be reflected in what is known as coding reliability thematic analysis. This type of analysis is a qualitative approach which combines aspects of the scientific method. It is deductive (theory driven) and uses the early development of themes within the dataset to generate a coding frame. This coding frame is then compared between researchers independently and subjected to statistical analysis to establish reliability of these themes by several factors e.g., frequency of agreement. Issues arising from the data which are not found to have statistically significant agreement are then resolved by consensus (Braun & Clarke, 2023). This form of thematic

analysis aims to reduce subjectivity by establishing consensus, from the data, between independent researchers.

The other form of thematic analysis (“big Q”) differs in that it is inductive (data driven) and is known as reflexive thematic analysis (Kidder & Fine, 1987). This approach is performed differently in that themes are constructed from codes towards the end of the process and indeed the themes are the objective of the research process. The subjectivity of the (sole) researcher is seen as integral to the process and the construction of themes through an iterative and reflexive process. The quality of analysis in this form of thematic analysis is centred around depth of engagement and immersion in the data by an iterative and reflexive process (Fig 4.3) which leads to continual refinement and deepening of theme construction (Braun & Clarke, 2022). Continued engagement within reflection and reviewing of the entire dataset is also a fundamental component of how quality is achieved within this form of thematic analysis.

In Study 2, I used reflexive thematic analysis for data collected by focus groups of UK Osteopaths, via semi-structured interviews. The key rationale for using this different qualitative method of analysis was that significant contention exists within the extant literature as to the applicability of IPA within group settings (Palmer et al., 2010; Phillips et al., 2016). Study 1 utilised this one-to-one interview to explore aspects of the lived experience of PR-LP and therapeutic benefit of OC from a deep, personal perspective as little was understood to date regarding this from a phenomenological perspective. In Study 2, I considered thematic analysis better in exploring the rich data provided by professional groups and the data that would be derived from their group dynamics and fluid discussions. This form of data collection and analysis was used to address the research question of this stage of the doctoral project with more clarity. Importantly, the design and implementation of this stage of the doctoral project was rooted in the “Big Q” inductive reflexive approach to TA (Braun & Clarke, 2006) rather than more descriptive forms of TA which use coding frameworks (Boyatzis 1998). I chose this approach for Study 2 as little was known about how osteopaths established the TA in OC of PR-LP, so this stage of the project was inherently exploratory. This meant that reflexive thematic analysis was more suited to the construction of themes rather than subjecting data to an established framework.

From this data I developed a Clinical Toolkit (Thoele et al., 2020) in Study 3 (See Chapter 7 and Chapter 8, Section 3.1 for detail of this process) which identified thematic domains which characterised the TA of OC in PR-LP. In Study 3, this toolkit, which represented an initial draft pilot of Information to inform clinical practice (Appendix 21) was then reviewed, for validity and agreement by a focus group of practising osteopaths, all of whom had experience of managing PR-LP. I initially used reflexive thematic analysis to analyse this data and codes which were constructed and aligned, where relevant

to the themes in Study 2 (Fig 6.3). However, the nature of and direction which the interview took meant that the data from this study was more amenable to a report of findings and subsequent discussion which was focused on concordance and consensus amongst this professional group as they engaged with this preliminary validation process (Chapter 8).

Figure 4.2: Iterative Thematic Analysis Process Stipulated by Braun and Clarke (2006)

1. Familiarization with the data: This involves transcribing, if necessary, and thorough reading to capture initial impressions and ideas.
2. Initial code generation: Systematically coding notable features of the dataset and collating data pertinent to each code.
3. Identification of themes: Organizing codes into potential themes and gathering relevant data for each potential theme.
4. Reviewing themes: Ensuring themes align with coded extracts (Level 1) and the entire dataset (Level 2), creating a thematic 'map' of the analysis.
5. Definition and naming of themes: Continuing analysis to refine theme specifics and the overall narrative, establishing clear definitions and names for each theme.
6. Report production: The final phase involves selecting notable examples, conducting a final analysis of chosen extracts, linking the analysis back to the research question and existing literature, towards the generation of the finished report of findings.

4.5.8 Focus Group Research

Focus group research is an approach which is commonly used in healthcare research as a method of exploring patients' and practitioners' perspectives and behaviours. A key aspect of focus group research is that the method is considered to create a synergistic effect whereby the interactions between participants lead to idea generation and mutual understandings. This is thought to provide data which is more enriched than solitary interviews (Morgan, 1997). Like one-to-one interviews, focus group research allows for the collation of detailed insights which would be hard to obtain from quantitative methods (such as surveys) alone. For the second and third study of this project I chose to use focus group research as the aims of these studies were to explore the professional practice and views of a professional group. Therefore, the group interactions and discussions would provide a richer and more detailed understanding of social and cultural determinants influencing health practitioner attitudes and conduct (Krueger & Casey, 2014). Additionally, as focus groups can provide collaborative discourse when exploring sensitive and intricate topics, participants can validate and contest each

other's perspectives, which augments the credibility of the collected data (Kitzinger, 1995). I considered that this, combined with the theoretical freedom of thematic analysis (Braun & Clarke, 2006) would strengthen the depth and generalisability of the findings of when compared to one-to-one interviews which were used in the initial IPA study. This does not mean to say that Study 1's findings were inferior: rather within that study a deep personal perspective was sought which may not have been provided within the dynamics of a group interview due to the potential vulnerability of the participants. Within Studies 2 and 3, however, the interaction of the professional groups was integral to understanding the nuance of the real-world practice of OC. Certain challenges arise when running focus groups and I had to be aware of these (Chapter 7, Section 1). Liamputtong (2011) states that ensuring diversity among participants is essential to collect the spectrum of participant perspectives in the group. Further challenges of moderating focus group research are highlighted by Barbour, (2007) who asserts that maintaining the focus of the question(s) at hand and managing power dynamics and differentials are key aspects of maintaining inclusive engagement of participants. Ritchie et al., (2014) also underscore the importance of maintaining rapport and trust with the participants in the group to facilitate a safe and supportive atmosphere for discussion to occur. To address these challenges, I engaged in a process of continued reflection and reflexivity which is outlined in Chapter 2 and Chapter 6.

4.5.9 Combining Qualitative Methodologies

The purpose of combining interpretive Phenomenological Analysis (IPA) with Thematic Analysis in the same project, is to draw on the strengths of both approaches to delve deeper into the lived experiences of participants while also identifying broader themes and patterns within the data. Interpretative Phenomenological Analysis (IPA) involves in-depth analysis of individual cases, through iterative cycles of coding and interpretation, with a focus on capturing the nuances and complexities of subjective experiences (Smith et al., 2009). Thematic Analysis on the other hand is a flexible and widely used qualitative method for identifying, analysing, and reporting patterns or themes within data and datasets. It involves systematically coding data to identify recurring patterns, topics, or concepts, which are then organized into overarching themes. Thematic analysis can be used to uncover both explicit and latent content within the data, providing insights into commonalities and variations across participants or cases (Braun & Clarke, 2006). IPA and Thematic analysis offer complementary perspectives on qualitative data. While IPA delves into the depth of individual experiences, TA provides a broader view by identifying overarching themes that cut across participants or cases. By combining these approaches, a balance can be achieved between understanding the rich, nuanced experiences of participants and identifying broader patterns or trends within the data.

A further rationale for using two different qualitative method of analysis in this project theses was, in addition to a richer dataset which addressed the aims of each study was that significant contention exists within the extant literature as to the applicability of IPA within group settings (Palmer er al., 2010; Phillips et al., 2016). The first study utilised this IPA approach to explore these aspects of the pain experience of PR-LP and therapeutic benefit of OC from a deep, personal perspective as little was understood to date regarding this from a phenomenological perspective. However, given the challenge of using IPA in group settings and the established utility of thematic analysis in exploring the rich data provided by professional groups, this strategy (thematic analysis) was employed for the 2nd and 3rd Study.

Chapter 5. Study 1: IPA of the lived experienced of PR-LP and the impact of OC

5.1 Introduction

In previous chapters the positive benefits of OC in the treatment of PR-LP have been discussed. Principally, these are understood to be improvements in functional capacity and reductions in pain (Licciardone et al., 2005). Franke et al. (2014) highlight positive outcome measures in PR-LP in 3 RCTs which examine the role that OC has in this condition. However, questions as to the quality of this evidence prevail due to imprecision and inconsistency in reported results. Differences between real-world osteopathic appointments and the use of “osteopathic techniques” in isolation have been identified as important determining factors as to what is occurring therapeutically in complex interventions such as OC. Given the identified lack of evidence and potential clarity around OC and PR-LP (Chapter 1 & 3), and the experience of PR-LP itself, there is a need to understand more comprehensively what the experiential nature of OC in PR-LP is from the patient’s perspective. This is particularly important given the mediating role that aspects of the therapeutic interaction and psychological factors play in pain management (Landmark et al., 2024; Pincus et al., 2002; Rossetini et al., 2024). To this end this study explored the lived experience of PR-LP and the impact that OC had on the condition.

5.2 Aims

The aims of the IPA study were twofold. Firstly, using IPA, the impact of PR-LP on the lived experience of pregnant women was explored. This approach was used to understand how the experience of PR-LP impacted both the psychological and physical aspects of the women’s’ lives.

Secondly, the impact of osteopathic treatment on the women’s’ lived experience was explored. This was done in the context of gaining a deeper insight as to how the women made sense of the therapeutic characteristics of this increasingly popular therapy and how this mediated transitions towards clinical changes in PR-LP.

5.3 Methods

To explore the lived experience of PR-LP and what impact OC had on the condition, an IPA design was used. This required a familiarisation with the relevant literature. At the time I held a full-time academic position (Senior Lecturer) in Osteopathy and as part of this was involved in teaching clinical skills in relation to the management of PR-LP at undergraduate level. I was also involved in teaching theoretical and practical (manual therapy) approaches to qualified osteopaths as part of continuing professional development. However, I was new to IPA and the finer detail of interviewing participants for qualitative

interviews. To address issues of familiarity with interviewing and inherent personal bias, I enrolled on a course in Psychologically Informed practice at an external university provider in June of 2017. In addition to this, I conducted a review of the relevant literature (Chapter 2) regarding the research question and specific forms of qualitative data relevant to the design of the initial IPA study (Chapter 4).

5.3.1 Development of Interview Questions

A reflexive approach was taken in collating the evidence from the peer reviewed literature and the generation of Chapters 1 and 2. In doing this I drew on my own experience as a registered osteopath and clinical educator in the context of the literature review to inform the creation of the semi-structured interview schedule for the IPA study (Fig 5.1). These questions were then reviewed by the Supervisory Team for concordance and relatability with Chapters 1 and 2. Following this I was assisted in performing a practice interview with a colleague who was suffering from PR-LP and had accessed OC during their pregnancy in August of 2017. This interview was helpful in refining the nature of the interview questions and my questioning “style”. For example, as a clinician I was already familiar with the concept of using open and closed questions to obtain information relevant to constructing case histories however, I realised that I was approaching qualitative interviewing slightly differently. This was likely due to a lack of familiarity with the nature of this type of interviewing, and I was perhaps somewhat “married to the outcome” at this early stage of the PhD, of obtaining useful information. I therefore softened my approach, and questions such as “*How has the PR-LP affected your mood*” became “*Has the PR-LP affected your mood?*”. Similarly, the nature of prompts and probes in the actual interview for this study became less directive and I was able to “sit back” from the dialogue and let the participants develop their narrative without excessive interruption.

5.3.2 Recruitment of Participants

Pregnant women who were experiencing PR-LP or had recently experienced PR-LP, were invited to participate. Participants were required to have been experiencing PR-LP for a minimum of three months in order to capture experiential data which was reflective of the persistent pain state (Kovacs et al., 2012). Participants were also required to have been currently undergoing or undergone OC for the treatment of their PR-LP. A recruitment advert (Appendix 1) was circulated via posters in the public areas of the Swansea University Health and Wellbeing Academy (HWBA) Osteopathic clinic. This was done via convenience sampling as the participants were local and easily accessible to interview. This poster was also provided to the Swansea University Occupational Health department to access staff members who may have been living with PR-LP. To widen access, an electronic copy of the recruitment advert was also circulated via the social media accounts of the HWBA. In addition to this, osteopathic practices across South Wales were offered the advert to display in their clinical practices. This was

done via the South Wales Osteopathic Society (SWOS), a regional professional society which comprises all of the private practising registered osteopaths in South Wales. The Treasurer of SWOS, a practising osteopath and Swansea University Lecturer in Osteopathy, acted as gatekeeper for this purpose (Appendix 6). Once the participants expressed an interest in participating in the study, and met the inclusion criteria, they were provided with the study information form (Appendix 2). Following this, a mutually convenient time for interview was arranged.

In response to the advert (Appendix 1), seven women came forward to and initially agreed to be interviewed. Of these seven, one woman withdrew prior to the interview due to personal convenience. Six eligible participants who were living with or had recently (within six months) lived with PR-LP agreed and consented to take part in the study. Initially, all participants were going to be offered an in-person interview at the HWBA. This was considered best practice as the face-to-face nature of the interview would possibly provide more richness of interaction and evident unspoken communication and gestures which is amenable to consideration via the IPA process. However, due to a slow uptake of interest in the study, this was changed to an online meeting via the software programme Gotomeeting. Changing the form of data collection in this way was done via discussion with the Supervisory team as upon reflection, the location of the HWBA, within the campus site of Swansea University was potentially difficult to access for individuals who were living with a painful condition (PR-LP). Similarly, at the outset of the study the inclusion criteria stipulated that participants should be nulliparous in order to sample a more homogenous sample. However, due to slow-up take in the study and following discussions with the Supervisory team, this provided an opportunity for myself to reflect on the qualitative nature and the extent of the worldview that the study aimed to capture. It was therefore considered that participants who had previously given birth should also be offered an opportunity to take part in the study.

5.3.3 Inclusion criteria

Women who were currently experiencing PR-LP or had experienced PR-LP in the last six months and had accessed osteopathic treatment were invited to participate. The women were included on the basis that they had experienced PR-LP for at least three months of their pregnancy. The women were not restricted by how many times they had been pregnant.

5.3.4 Exclusion Criteria

Women who were under 18 years old or were unable or unwilling to give consent were not invited to participate in this study. Women who declared via the consent form (Appendix 3), a history of major depressive illness were also not invited to take part in this study. This was done in order not to exacerbate psychological distress via questioning vulnerable participants about their negative experiences. Similarly, women who had previously undergone spinal surgery were not invited due to

the possibility of altered sensitivity of the spinal and pelvic structures which could have led to a lived experience which was not representative of the majority of those who experience PR-LP.

5.3.5 Data collection

Six participants who met the eligibility criteria of the study were interviewed via in-depth semi structured interview. The study used the IPA model adapted from Smith and Osborne (2008). Participants were asked the questions for Study 1 (Fig 5.1). The interview was recorded and following the interviews the data was transcribed verbatim. The IPA study explored the lived experience of the six pregnant, or recently pregnant (within six months) individuals (Fig 5.2) who had suffered from PRLP for at least three months of their pregnancy, and how OC impacted the women's experience of PR-LP. This was achieved by exploring the participants' concerns, feelings and experiences through semi-structured, flexible interviews. Access to the various domains of their life experience such as home life, activities of daily living, mood, and pain experience was gained by open ended questioning supported by prompts and probes but also allowing the participants to lead on unanticipated topics. The interview questions were constructed so as to engage with the meaning of pain in pregnancy for these participants and how they made sense of these experiences whilst undergoing osteopathic treatment.

Figure 5.1: Questions for semi structured interview, Phase 1 IPA study:

- 1) How do you view your PR-LP during pregnancy?*
- 2) Has the PR-LP interrupted daily activities? (personal, social, work)*
- 3) Has the PR-LP affected your mood?*
- 4) Has the PR-LP affected your expectations of what pregnancy would be like prior to being pregnant?*
- 5) How has osteopathy affected the PR-LP?*
- 6) What was the experience of the osteopathic treatment like to go through (good/bad)?*
- 7) Is there anything else you would like to discuss in relation to your PR-LP and pregnancy?*

Figure 5.2. Participant characteristics

<i>Participant</i>	<i>Age</i>	<i>Gravidity</i>
Alison	32	2
Bernice	29	2
Catherine	30	1
Denise	38	1
Elizabeth	34	1
Frances	35	2

5.4 Analysis

Following the participant interviews the recorded speech was transcribed. I followed the IPA process described by Smith and Osborn (2008). For each participant case, I read and re-read the transcript several times to become immersed in the data and conduct an interpretive reading. Initial responses to the text within the transcript were recorded in the left-hand margin under the heading “themes in the first case”. After further reading and reflection these themes were recorded as emergent themes in the right-hand margin. The themes were further considered in order to cluster similar themes which appeared to be connected. This resulted in a master list of superordinate themes and sub-themes. These results were tabled with identifying information based on participant (anonymised by the use of a different name) as well as a line and letter number of where the themes could be found in the individual transcripts.

I then took a reflexive approach and clustered together connected or related themes to create overarching themes. After this process I then used the emergent themes from the first transcript to orient the analysis of subsequent transcripts, in an iterative fashion. Once each transcript had been analysed, a final table of superordinate overarching themes was constructed (Fig 5.3). A narrative account of analytic interpretation was prepared in detail with verbatim extracts from participants (Section 5.5-5.8). During the clustering of themes, I scrutinised the transcripts to make sense of the concepts which were emerging from the data. The transcripts were reviewed in sequence from Participant A through to Participant F. In this manner the commonalities between participants’ experience were sought and the final compilation of the master list of superordinate themes and subthemes was further edited. Whilst the data is consistent with similarities between the participants’ experiences it is important to note that sense was not derived from the data set purely along the lines of how regularly similar themes arose. Rather, the richness of participants’ individual responses also

informed the establishing of themes and connections. At this stage certain themes were dropped due to either relative repetition or a lack of substantiating evidence with the transcript. In this way the process attempted to be consistent with (Yardley, 2000) principles for demonstrating validity. Three transcripts were audited by a colleague familiar with IPA methodology in order to establish concordance of interpretation and strengthen the peer debriefing process. This procedure aligns with healthcare-related IPA studies in the extant literature (Birtwell et al., 2015; Murphy et al., 2021)

5.5 Findings

Four superordinate themes and nine subordinate themes were identified. The superordinate themes represented wider aspects of the women's shared experience. Each superordinate theme was broken down into a range of subordinate themes.

The participants' accounts generated four superordinate themes; Disruption to my Life, Psychological Impact of PRLP, Comparing my Present Self with Previous Self, Psychological Impact of Treatment, and Physical Impact of Treatment. The superordinate themes represent broader aspects of the lived experience that was shared by the women when discussing how PR-LP affected them and how OC impacted this. A further nine sub-themes which highlight specific aspects of the shared experience of the women emerged and were grouped under the broader superordinate themes (see below; Fig 5.3). The number of women who described each subordinate theme and summaries of the themes are provided below (Fig 5.3). Quotes are used to illustrate the themes. As mentioned above, all participant names have been changed to maintain anonymity.

Figure 5.3 Superordinate themes generated with sub-themes?

Superordinate Theme	Participant:					
	Alison	Bernice	Catherine	Denise	Elisabeth	Frances
Disruption to my life						
a. Impaired mobility	X	X	X	X	X	X
b. Difficulty with ADLs	X	X		X	X	X
Psychological impact of PR-LP						
a. Fear of pain	X	X				
b. Emotional Strain	X					X
c. Comparing self with others	X	X		X	X	X
Physical impact of OC						
a. Relief	X	X		X	X	X
b. Improved mobility	X	X	X		X	X
Psychological impact of osteopathic care						
a. Education and reassurance	X	X		X	X	X

b. Improved coping and mood	X	X	X	X		X

5.5.1 Superordinate Theme: Disruption to my life

Due to suffering with PR-LP, all participants experienced disruption to normal activities of daily living which principally caused difficulties with moving, engaging in work and performing household tasks. The subthemes below illustrate the context and significance to the participants experience.

5.5.1.1 Subtheme: Impaired mobility

The baby was due in August, and I guess around about May time I started getting lower back pain, and it got so bad that I was unable to go to work. I don't remember the back pain being mild, It just seemed to all of a sudden be so bad I was unable to sit in a car and sit down in a seat with ease at all. It was really quite difficult. Alison

All participants had trouble with mobility as a common aspect of their experience of PR-LP. The above excerpt from Alison provides us with access to her world view and personal struggle with simple actions such as sitting in the car and sitting down in a chair. She emphasises the difficulty of this impairment in basic functioning. The impact that her PR-LP has on her is framed in the context of her baby being due in August and she faces, potentially months of this level of physical compromise. This severity of the “disabling “nature of PR-LP was seen across most of the participants’ experiences, highlighting how compromising the condition could be. In Alison’s example we are further provided with the “urgency” of how destabilising not being able to attend work may be for her, particularly in the context of the imminent birth of her child.

Walking uphill, I can't do. It's just, it's just pain. Bernice

Disruption to life, characterised by dramatic changes in mobility and functional capacity was further highlighted by Bernice’s experience. Throughout her narrative of the lived experience of PR-LP several examples demonstrated the overwhelming nature of the condition and how this blighted her with a distressing consistency. Her excerpt above, introduces her personal struggle as that of an immersive totality; movement that previously would have been normal to her, becomes the complete experience, of pain.

I tried all sorts of cushions and um moving in different positions with the chair. And um, the only thing I could do to manage it, was to sort of get up every half an hour and have a walk around, because I just found that my hips and my pelvis, that, that was really bad towards the end. So it was just, you know, taking the advice of um, the midwife and of her (the osteopath),

to sort of trying to keep moving, and sort of, you know, don't stay in one position for too long.
Elizabeth

The urgency and disruption to Elizabeth's world is evident from her excerpt above. Her problem is framed as a stage of almost agitation whereby she is unable to sit peacefully, being perpetually kept in a cycle of having to change position. This restless state was a feature of PR-LP for several of the participants who found it difficult, through their experience of PR-LP to obtain relief or respite from the ever-present grip of PR-LP as it blighted their lives.

5.5.1.2 Subtheme Difficulty with Activities of Daily Life (ADLs)

It's really hard having a toddler who wants to be lifted up. Like we were in the middle of toilet training her. I couldn't lift her onto the toilet, it was, it was, it was like I could put washing in the washing machine, I could get it out, but I couldn't lift the basket of washing, because I just had this like sickening pain in the pelvic area. Bernice

Most of the participants had narratives which illustrated a difficulty with specific tasks and ADLs. This compounded the disruptive influence which PR-LP had on their lives. Bernice's excerpt above highlights an existence where, due to PR-LP she is unable to care for her toddler fully and struggles to cope with tasks which would have previously been an aspect of daily life. We are afforded an insight into the beginnings of how her perception of her role as a mother and contributor to the running of her household is threatened by her experience of PR-LP. The context of how her autonomy is compromised is framed in terms of emotive and unpleasant description of a "sickening pain" as it was throughout her account of her PR-LP experience.

I would say I'm more frustrated, like when trying to do stuff in the house before the baby comes, and I can't do stuff, and I'm relying on my husband, like, and even doing the washing. Shopping, like I can't lift stuff out of the trolley, so like, I can't like physically go do our weekly shopping.
Bernice

The impact on day-to-day functioning is further highlighted by Bernice's excerpt above. Her struggle with PR-LP and how this has impacted her from performing key aspects of household maintenance. Again, we see an urgency, which characterised several of the participants' accounts, in that the disruption of PR-LP is framed within a destabilising context as their upcoming birth draws nearer. Of further note here is how PR-LP causes Bernice to rely on her husband to perform simple tasks due to impaired mobility and the level to which PR-LP is impacting her. This was a common feature of the experience of PR-LP in this study and established the context for several participants in how their autonomy and ability to cope was eroded by PR-LP. In Bernice's example we see how the physical aspects of her experience of PR-LP begin to establish cognitions which are consistent with

psychological distress (frustration). This was also a facet of the experience of several of the participants as they struggled with the ongoing challenge of PR-LP.

A lot of people just said it was part and parcel of the pregnancy and obviously I had another few months to go so, it was really difficult and driving in the car was almost impossible. So, when I was going back and forth to work my dad was taking me. Alison

Alison's (above) autonomy is further compromised, her problems with getting to work, and the inconvenience of that in the context of the upcoming baby are woven into her narrative of having to rely on others due to her experience of PR-LP. Her reliance on her parent to take her back and forth from work, resonates with perhaps a contextually deeper regression to reliance on others and how that may compound the disruption to her life.

I just remember being really miserable, because I was trying to enjoy the pregnancy because it was my first one, and we had beautiful weather and I just couldn't do anything. Alison

Alison,(above) like most of the participants in this sample, experienced disruption to her life which was not only concerned with the practical and day to day aspects of her roles and responsibilities. From her excerpt above, we see how the experience of PR-LP stretches beyond the deontological and into the existential. The totality of her pain impacts simpler things in life concerned with enjoyment of the day. This early excerpt further demonstrated the multifactorial impact that PR-LP had on the participants lives and how domains of (impaired) physical capacity linked to psychological wellbeing.

I would say it's really frustrating. And like last night, I went out for a meal with the girls, um, and we met at half six, and by eight o'clock, I was just like, I'm done, I want to go home and lie down because I'm just uncomfy. Bernice

Similarly, Bernice's excerpt above highlights how social connections and activity were interrupted by her experience of PR-LP. From her excerpt we see how her pain experience impacts not just her internal thoughts and feelings but how it extends into her life beyond the home and family.

Not sleeping at all, couldn't really move very much, and I had been swimming since I was like four months pregnant, um and then I couldn't even swim any more, and then I went to see the osteopath, um and they, well, the midwife told me I had pelvic girdle pain. Catherine

Catherine, (above) experiences a disruption to life in that her PR-LP prevents her from sleeping and that her issues with mobility detract from day to day functioning by stopping her from swimming in the second half of her pregnancy. Her excerpt illustrates how PR-LP ceases her ability to engage with a recreational pursuit which represents a proactive health behaviour. The significance of this is

impactful across a range of aspects of her life which could improve her pregnancy and birth. This was a common feature of how PR-LP impacted the participants in this study, whereby recreational and social pursuits which were part for the fabric of daily life and normal behaviours were made impossible by the experience of PR-LP.

5.5.2 Superordinate Theme: Psychological Impact of PR-LP

All of the participants experienced a degree of psychological distress which was caused by experiencing PR-LP. This psychological distress was experienced across domains of experience such as a fear of PR-LP and its significance, emotional strain as a result of PR-LP and its impact on life as well as PR-LP related disruption to the individuals' concept of the self.

5.5.2.1 Subtheme: Fear of PR-LP

It honestly felt like it was going to snap, it was that like broken bone feeling, like I just felt, every time I moved suddenly would hurt. Bernice

Bernice's metaphor of feeling like she was going to "snap" and the way that throughout her narrative of PR-LP experience she frames her pain as severe as a "broken bone" provides access to the vulnerability she feels in the face of PR-LP. We are afforded an insight into how the fear of the pain is changing her behaviours and ability to move freely without worrying about the consequences. Her excerpt seems to speak of a fearful state which underscores the cognitive impact and psychological weight of PR-LP. Her cognition that harm will come to her through moving normally represents an example of thinking about the worst-case scenario or that the outcome of normal behaviour will amount to the worst possible outcome and resonates with the concept of catastrophising (see discussion).

And I remember saying to my midwife, there's no way I could give birth as I could barely sit down, and I was thinking, like in my worst mood that I'd need a Caesarean. I thought there's no way I can carry on because everyday-to-day tasks were difficult. Alison

Pain related fear which drives catastrophic thinking is more explicitly articulated by Alison (above). Alison describes a situation whereby due to the level and severity of her pain and disability she will be unlikely to undergo a normal birth and will require surgical intervention (caesarean section) to bring her child into the world.

I wouldn't say...depressed is probably a strong word. But I would probably say it was, it was definitely taking the enjoyment out of my pregnancy. Frances

Frances' account above further highlights the psychological weight that PR-LP represented to the participants. She identified that she is "not depressed" per se but illustrates a world view whereby due

to PR-LP her mood is impacted to the extent that she is not enjoying her pregnancy as much as she would like to.

5.5.2.2 Subtheme: Emotional Strain

I'd say the first week, I just felt, um in a lot of pain, and really down, really, really down about it. I just felt um like, I just didn't want to be pregnant anymore, I just literally hated it, because I was in so much pain. Bernice

Bernice's account (above) illustrates the impact of PR-LP on her mood and emotional state. Her stressing of "really down" emphasises how much she was impacted by her pain from an emotional perspective. The context of her account is framed in a very negative way whereby she states that she wishes the pregnancy was over and that she "hates" being pregnant. Through this account and its emotive language, we are provided with an insight into a bleak narrative which speaks of a constant daily struggle with no potential relief.

And I remember thinking there's no way I can carry on, if I've got a beautiful baby and in pain it would be impossible. Alison

Alison, (above) similarly illustrates a bleak outlook which is brought about by the experience of PR-LP. Her emotional strain seems to give way to feeling of hopelessness and defeat. This is emphasised by the juxtaposition of the concepts of "beautiful baby" and the impossibility of life with PR-LP. These negative cognitions provide an insight into the difficult and sometimes desperate world view of the participants as they lived with PR-LP.

And then, and then to being able to, and then all of a sudden not being able to do it, it's like oh, where's this come from, how's that happened, and almost to the point where, there were a couple of occasions where I was literally crying and just couldn't walk Frances

Frances, (above) provides her narrative of emotional strain in the face of PR-LP. She describes a level of physical impairment and pain which has impacted her severely and is foregrounded by the "suddenness" of the change which PR-LP has brought to her life. This is illustrated by an incredulity, or shock as she questions the nature, cause and meaning of PR-LP to her. The uncertainty of her condition and how she is going to cope is highlighted by a stark image of a vulnerable pregnant women, unable to walk and in tears due to her condition.

5.5.2.3 Subtheme: Comparing self with Others

Yeah, whereas with my second, I still was weight-training with my first one, whereas with the second one, I wasn't able to do much of that because of the pain and everything. So even between the two pregnancies, I didn't expect to suffer like I did with the second one. Frances

All the participants made comparisons with their concept of their notional self because of their pain. PR-LP in this study, seemed to consistently underpin negative evaluative cognitions where the participants compared their current selves with past selves, future selves (usually in relation to coping) and societally expected norms. Frances (above) highlights that in her past pregnancy, she was still able to engage in healthy movement and physical training. Her account illustrates that PR-LP during her second pregnancy brought much more suffering and impairment to daily life.

I asked my husband to move something, I said, 'oh can you move that for me, it's a bit heavy' and he was like 'that's not heavy at all', he was like 'you really need to care (be concerned) if you thought that was heavy'. And it's not that it's, it's heavy arms strength, it's more that pelvic area, I'll just get that sickening, kind of pain if I lift anything heavy... I was just feeling guilty, I think, I just felt guilty feeling like I'm being a rubbish mum, or being a rubbish wife because I can't do the housework, and now I'm costing us more. Bernice

Bernice's account (above) further illustrates how negative appraisal of the self in context in relation to her past self was a feature of the experience of PR-LP experience. Her ability to lift objects in her persistently painful state is compared to her husband's. This negative appraisal undermines her resilience and illustrates how she is reluctant to "forgive" this impairment in the context of her current PR-LP. Instead, she dwells on her lack of ability to perform tasks which were previously straightforward. Of note here is her framing of her pain as "sickening". This emotive language characterised her narrative of PR-LP and provides insight into a worldview where unpleasant sensation and physical impairment in tandem, permeate daily life. Bernice's account also provides insights of how with eroding her autonomy, the PR-LP experience drives guilt-related cognitions where she evaluates her role and identity as a parent and spouse negatively in the context of her pain. This aspect of the PR-LP experience was shared by other participants in this study.

I mean a lot of people said that you would get back pain during pregnancy, but I remember thinking "surely it's not meant to be this bad" because I was housebound for a couple of weeks with it. It probably lasted about 2 weeks or so before I was able to get any help, as I'd never had any back pain like that before, so, and a lot of people just said it was part and parcel of the pregnancy and obviously I had another few months to go. Alison

Alison, (above) evaluates her PR-LP in the context of what other people would consider "normal" for pregnancy. She frames this in terms of what other people in her social circle report is normal however, her questioning of the severity of her PR-LP leaves her doubting that her pain is the same as what is commonly accepted. The fact that she was housebound for a period adds to this uncertainty of whether her PR-LP is in fact the normal PR-LP which other people consider to be "part and parcel" of

the experience of pregnancy. In context, this uncertainty opened her up to negative comparisons with how she could cope with pain in relation to others and how she could come with the future months of her pregnancy, in the face of overwhelming PR-LP.

5.5.3 Superordinate Theme: Physical impact of OC

All the participants experienced physical effects of receiving OC which were positive. The extent of these effects appeared to be impactful to the participants and were focussed on relief from PR-LP and improved mobility.

5.5.3.1 Subtheme: Relief

I really enjoyed it. Gosh, when I left, I felt much more supple and flexible. It definitely lifted my mood because I remember sitting in the waiting room, thinking I shouldn't even be here because I was the only pregnant person there, I thought "I really am clutching at straws here". And when they said they could actually help, I thought "gosh there's a light at the end of the tunnel here and I may be actually able to resume a normal life before the baby comes along".

Alison

Alison experienced OC as enjoyable and in addition to this, experienced improvements in suppleness and flexibility. This indicated that her previously perceived frank disability which led her to be housebound and unable to attend work, were positively and significantly impacted by receiving OC. She further frames this in how the physical receipt of OC went some way to impacting her psychological state. We see quite how this alters her outlook in a life-changing way by her metaphor of "light at the end of the tunnel". This illustrates that hope has returned to her previously dire circumstances, and she can perceive of her current and future self, living a normal life. The significance of this can also be seen from her account above as she describes being in the osteopaths' waiting room prior to receiving OC. Her context of being the only pregnant person there and that she was "really clutching at straws" highlights how insurmountable her PR-LP had become and how isolated this and the nature of enduring pain whilst pregnant may be.

5.5.3.2 Subtheme: Improved Mobility

it's massively helped me to feel more mobile. Also to trust that I'm not going to break anything, because, because it's got that kind of breaking bone feeling, I was almost a bit afraid to do things, thinking I'm going to damage myself further. Bernice

Bernice's account above, expresses that the physical relief for OC has a notable impact on the disabling immobility that affects her due to PR-LP. Her narrative here is interesting as she refers back to the metaphor of "breaking bones" which frames again, how severely impacted she was by PR-LP. In this context we see that she has negotiated a more trusting relationship with her physical body and the

ability to move with more confidence, that she can do so safely. Her narrative is interesting as the fact of receiving the physical aspects of OC (hands-on treatment) is the context in which she reported this aspect of her experience. From this we are provided with a perspective which was shared by all of the participants; that OC changed their outlook and strengthened their resolve to carry on.

I would feel a lot better and have a lot more movement in the areas. So, it was just being able, to sort of bend and twist a little bit more, um and not have that pain. Elizabeth

Similarly, Elizabeth's excerpt resonates with all the participants in this study. The narrative accounts universally described pain which was either severe, disabling or both. This impacted the day to day lives of the participants in meaningful and important ways and in most cases seemed to ebb away in relation to the receipt of OC.

5.5.4 Superordinate Theme: Psychological impact of OC

All of the participants experienced changes in their symptoms of PR-LP-associated psychological distress. This was contextually centred around the concepts of education and reassurance, and improved coping and mood.

5.5.4.1 Subtheme: Education and Reassurance

And then there was a kind of emotional reassurance of don't worry, take it easy, think about how you're doing this, think about how you're doing that, kind of practising different ways of getting out of bed, or turning over, or kind of, practical advice basically. Denise

Denise's account (above) highlights that in addition to relief which was perceived as a result of the physical interaction of touch-based therapy (the physical manipulation of osteopathy), she derives benefits from OC which is centred around psychological support. Her summative description of "don't worry, take it easy" in this context seemed to provide her with relief, in that she could set aside the guilt which had permeated her narrative up until receiving OC. This was one of several examples of how the reassurance provided within OC seemed to facilitate change in the participants' narratives, to a more positive outlook through validation and education around their concerns. Of note here is that her account details an emotional reassurance which seems to soothe and support her mental state which is then followed up by practical advice which supports her, moving forward in the face of PR-LP. This approach, which seems to operate on different forms of reassurance and education within the same therapeutic encounter, or series of encounters seemed to resonate with the experience of several of the participants in this study.

Being able to get exercises tailored to what was the problem at the time, um I would say that helped a lot. So, I had a lot of homework as well, which was, you know, if you can't sleep because you were in pain, having something to do, helped I think. Elizabeth

Elizbeth (above) details further an aspect of OC which was commonly experienced by the participants in this study, that of education and advice around PR-LP and strategies to mitigate its impact. She derives satisfaction from the fact that her advice and exercises appeared to be tailored to suit her individualised needs. This resonated with the accounts of most of the participants in this study in that the individualised nature of OC seemed to be adapted to them specifically. This contextualised the experience of OC to the participants generally in that they were “heard” and validated around their concerns and pain. This facet of OC seemed to amplify the perception that the osteopaths were caring individuals who could guide the participants away from the negative consequences of their PR-LP.

5.5.4.2 Subtheme: Improved Coping and Mood

But yeah, I would say that it's um...the guilt has gone a bit, because I know my daughter needs to become independent, so in a way, it, it's, now I'm thinking it's probably a good thing, because she'll understand that there's some things mummy can't do and she would be really grown up about it. Bernice

In addition to, and as a result of the reassurance and education that OC provided for them, the participants experienced changes in their ability to cope and how they faced the remainder of their pregnancy. This appeared to be linked to reductions in how psychologically distressed or preoccupied they were with living with PR-LP. Bernice (above) talks retrospectively about how after receiving OC her cognitions have changed. In the context of receiving OC for PR-LP she states that her PR-LP related guilt has reduced. We see an insight into how her worldview has changed in that previously distressing cognitions around being a bad parent or spouse are plaguing her less than before. We are presented with an image of acceptance; a woman who is re-negotiating her expectations of herself through being more at ease with the adaptations to daily life that are necessary through her pain.

Yeah, I think so, um, although it's quite difficult for me to disaggregate the pain, I think physically it helped, but also it helped just to feel like I was in control by doing something about it. Denise

The excerpt from Denise (above) also illustrated that through receiving OC, there were physical benefits that she experiences but that the action of seeking care through osteopathy seemed to be positive as it allowed her to gain control over her condition. This is interesting in the context of her narrative which was imbued with severe pain and psychological distress. We see from this that she frames OC positively and that engagement with it represents a change towards more pro-active health behaviours.

So again, all of his advice was really helpful with that, because that was quite painful after the birth, and then trying to look after a newborn baby as well (laughter). Frances

Frances' narrative (above) highlights the context of how she reconciles the suffering of PR-LP, there is even some humour as she reflects on a difficult and disabling time, which from her experience was mitigated by receiving OC for PR-LP. This resonated with most of the participants reflections when looking back on their PR-LP experience having undergone treatment which seemed to strengthen their resolve to continue and look towards a brighter future.

My mood was pretty bad throughout the whole pregnancy, and I had hyperemesis as well till I was seven months pregnant, from like pretty much day one..my mood wasn't great during my pregnancy (laughter)..I don't think that was due to the pelvic pain, I think that's the least of it. Catherine

Notably, Catherine's excerpt (above) displays a narrative that was somewhat different from the other participants in this study. Catherine was beset by similar problems of pain and immobility, in relation to PR-LP and these were reduced by receiving OC. However, Catherine, unlike the other participants highlighted that other aspects of pregnancy-related health issues dominated her experience and were more attributable to her day-to-day struggle than PR-LP. This is interesting both in the context of her experience and how she managed to re-engage with life despite suffering from PR-LP

5.6 Discussion

The two aims of this study were to explore the nature of how PR-LP impacted the lives of participants, and to understand how the condition affected the participants during the time that they were suffered with the condition.

The findings of this study showed that the participants' experience of PR-LP was characterised by physical disruption to their daily lives. This was due to impaired mobility and subsequent difficulty with ADLs. These disruptive elements to the experience of PR-LP also disrupted daily life in ways which caused the participants to experience reduced sleep, impairment in exercise and recreation as well as the phenomenon of having to rely on others. Psychological distress was also a reoccurring component of the participants' lived experience. This was characterised by fear of pain, and emotional strain, which in one individual was linked to feelings of hopelessness. Due to PR-LP, participants also experienced pain-related cognitions which centred around negative comparisons with others, negative comparisons with past-selves and an anticipatory fear of future events.

The experience of receiving OC for PRLP was consistently positive. Participants experienced physical relief which was characterised by improved mobility and rapid reductions in perceived pain. In addition to this, through OC, the participants experienced reductions in psychological distress and emotional strain which were accompanied by improvements in mood and an increased ability to cope with PR-

LP. This was experienced in the context of the education and reassurance as well as a physical manipulation that their osteopaths provided. The findings are discussed below and compared with previous empirical findings which are relevant to PR-LP, manual and MSK medicine in general.

5.6.1 The Lived Experience of PR-LP

The participants in this study experienced significant and disabling impediments on their ability to move. In each case this was strongly attributed to their PR-LP. This lack of mobility was frequently associated with a profound disruption to multifaceted aspects of their day to day lives. The participants made sense of this, at least initially, from a mechanical perspective of their PR-LP meaning something was physically “wrong” with their back and pelvic region and was, as such, limiting movement. This commonality of the participants’ experience aligns with previous studies which have demonstrated that PR-LP, comprising both lumbar and pelvic models, impairs sufferers’ abilities to lift, walk and perform basic movements which require lumbopelvic stability (Licciardone et al., 2005; Neilsen, 2010; Ollson et al., 2012). Similar to the participants’ experience in this study these findings have been found to be accompanied by significant psychological distress and negative emotional impacts (Bjelland et al., 2013; Close et al., 2016; Ollson & Nilsson-Wikmar, 2012).

The current findings regarding the theme of “Disruption to my life” show overlap with previous work which demonstrated that during the time when individuals suffer from PR-LP they are likely to experience difficulties with activities of daily living (ADLs) (Ollson & Nilsson-Wikmar, 2004). Hansen et al. (1999) demonstrated that individuals with pelvic pain related to pregnancy were likely to experience difficulties with housekeeping as well as walking and working. The authors also highlight sexual problems due to pain at this time however this study did not find that participants reported dysfunction in this domain. Within the superordinate theme of “Disruption to my life” the two subthemes of “Impaired mobility” and “Difficulty with activities of daily life” reflected a commonality of the experience of all participants in this study. These findings resonated with previous research which highlights that individuals affected by PR-LP struggle with ADLs such as standing, walking, picking up and moving objects, and performing household tasks (Buin et al., 2023; Cernja et al., 2022; Crichton & Wellock 2008; Persson et al., 2013).

Of further note was the participants’ perceived ability to carry out tasks which related to their occupations. Several of the participants struggled to sit and stand and move whilst at work which effectively caused marked disruption to their engagement with their jobs. In the example of one woman (Elizabeth) she struggled with the most basic of activities such as sitting and walking which caused her significant distress. She made sense of her suffering in a way that she could see the relationship between her developing pregnancy and the pain and actively followed the advice of her midwife and osteopath in relation to this. However, other participants did not necessarily see this

relationship so clearly. Alison for example struggled to comprehend the level of disability which she was affected by and experienced. She experienced her pain in the context of “suddenness” and could not recall a time when the pain had been mild or gradually encroaching upon her. This located the pain in terms of something more “severe” than expected and established a more threatening construct with which she made sense of her experience and aligned with previous work which demonstrated that PR-LP affected individuals can find the nature and onset of their pain shocking and unexpected in addition to being hard to comprehend (Crichton & Wellock 2008; Persson et al., 2013). Alison viewed her PR-LP, in a broader societal context, due to discussions with many others which seemed to normalise PRLP as something which was expected “part and parcel” of pregnancy. What was foregrounded in her experience, was an understanding that she was in pain due to her pregnancy: however, on a deeper level, she did not understand why her experience was at odds with the experiences recounted by those within her social circle. On one hand this may have been due to increased psychological distress which affected her ability to seek social support and avoid stigma (Blais & Renshaw, 2012). Alternatively, Elizabeth may have been affected by an enmeshment of her future self which prevented her from taking positive action (Morely et al., 2005). This served to reinforce her feelings of uncertainty: “surely it’s not meant to be this bad”. This is important in that uncertainty or the state of being uncertain (particularly if the cause is not fully understood) about pain or illness is known to increase feelings of psychological stress, helplessness and the intensity of the pain itself (Harkapaa et al., 1991). A previous IPA study highlighted the need for further support for the problem of uncertainty during back pain (Osborn & Smith, 1998). The authors discovered that the significant distress experienced by participants with persistent LBP was due to their “searching for an explanation”. However, in comparison with the present study, this earlier work did not explore the experience of those who were pregnant and therefore must be treated with caution in terms of generalisability.

Only a small amount of qualitative research to date has explored the experience of individuals suffering from spinal and pelvic pain during pregnancy. However, the findings of disruption to the participants’ lives and psychological distress have previously been highlighted via a qualitative approach using one-to-one interviews and thematic analysis (Clarkson & Adams, 2018). Of note is that the authors explored specifically the experience of pelvic girdle pain (PGP), however, this is still meaningful for this study due to the significant potential crossover and inclusion of PGP within the model of PR-LP (Van Bente et al., 2014) (See also section 1.4).

One woman (Alison) in the present study suffered so much from her PR-LP to the extent that she was unable to physically attend work due to being housebound. This finding supports previous empirical work which demonstrates that the incidence of pelvic girdle pain is impactful upon work and

predicative of sick leave in pregnancy (Malmqvist et al., 2015). This level of disruption has significant meaning for the experience of PR-LP in that individuals who are unable to attend work may be subject to negative effects on their identity and role within the societal context of their worldview (Kut et al., 2007). Negative self-perceptions such as these may represent negative influences on the social component of the BPS model which in turn impacts an individual's worldview regarding the severity of pain and how that individual engages with action which is helpful and consistent with return to normality. This has specific relevance for this study as impaired ability for individuals to engage with action has been shown to be consistent with the establishment of self-conscious emotions (SCEs) such as guilt, shame and mental defeat in persistent MSK pain (Turner-Cobb et al., 2015). Interestingly Malmqvist et al. (2015) also found that in addition to pelvic girdle pain, impaired sleep was further predictive of sick leave in pregnancy. This has meaning for this study as two of the participants in this small sample found that their PR-LP caused significant disruption to their sleep and a growing body of literature highlights the importance of this phenomenon on recovery from physical and psychological health impairments.

In addition to work and daily tasks the participants in this study also experienced significant disruption to their life in that they were unable to engage in ADLs related to social and recreational life. Due to their experience of PR-LP. In most participants in this study, this caused a disruptive effect on their life which was principally characterised by a profound limiting of engagement with meeting friends and continuing with sporting activity. This affected all but one of the participants in this sample and drove emotional responses such as frustration, A finding which resonates with previous qualitative analyses of the experience of PR-LP (Buin et al., 2023; Crichton & Wellock, 2008; Persson et al., 2013). Regarding social activity we can see how the two accounts from Alison and Bernice overlap. For example, Alison's experience was more general; overall, underpinned by simply not being able to enjoy the "beautiful weather" which was present during her pregnancy however at the root of this was how PR-LP had impacted most facets of her life and led her to experience an inability to "enjoy the pregnancy". How she made sense of this in not being able to do what she once had highlighted an overall disappointment as her expectations in what being pregnant would be like were compared to the reality of living with PR-LP. This insight is useful in understanding Alison's lived experience as in addition to feeling negative emotions (misery), negative emotions related to expectation may serve to further drive uncertainty within illness which can lead sufferers to experience difficulty with future planning. This is thought to be a lack of ability to resolve to engage with proactive behaviours which allow the individual to move from the distressed state to a less fearful and more hopeful mindset which can facilitate recovery (Lumley et al., 2011). Furthermore, Frances, a multiparous participant was alarmed at how her PR-LP had dramatically changed her expectations and understanding of what pregnancy

would be like as having not experienced this disruption before with her previous pregnancy. This had meaning to her in that she compared her previous ability to cope well during her first pregnancy with her inability to do so, now beset by PR-LP in a negative context.

From the example of Bernice here we see a similar experience on how social and recreational pursuits were negatively impacted by PR-LP. However, this differs somewhat from Alison and Frances' accounts as she experiences a specific disappointment at not being able to engage with social dinners with her friends due to her PR-LP. She foregrounds this contextually, as feeling "frustrated". However, on a hermeneutic level a vulnerability emerges which could indicate not just a retreat from the actuality of social life but a metaphorical regression to the state of "giving up": "just wanting to go home and lie down". This was alarming at interview, in the apparently desperate way that she stressed the inflection of the words "just want" and "go home". The significance of Bernice and the other participants who experienced a reduction of social engagement due to PR-LP is highlighted by earlier qualitative work which explored how the development of a pregnant woman's relational self as she psychologically prepares for the role of motherhood is in part reliant on social interaction with close others (Smith, 1998). As such, this aspect of the participants' worldview in this study may have contributed to the overall picture of psychological distress which was seen to emerge within the lived experience of PR-LP.

Most of the participants experienced disruption to their lives which seemed to interact with key aspects of the BPS model (see Chapter 1, Section 3). This led to clear and persistent disruption to key aspects of day to day living. This is again consistent with some of the findings of the small amount of similar work in the literature (Clarkson & Adams., 2018; Close et al., 2016) and is further highlighted In the example of disruptions to social and work life which meant that participants were unable to see friends and colleagues and subsequently gain the reassurance and psychological support that these interpersonal relationships would have provided during this difficult time (Junttila et al., 2015) whilst not being able to exercise fully and in accordance with their expectations, potentially jeopardised the beneficial effects on tissue health (Lee et al., 2018). This lack of healthy physical and psychological engagement may have also negatively impacted pregnancy-related comorbidities and mood (Fridman et al., 2014).

Further support for the BPS impact as a key aspect of the participants' PR-LP experience is seen in the interaction between the physical and psychological affects that they underwent. The physical impediments and intensity of pain were viewed within negative emotional and cognitive contexts which are commonly associated with the persistent pain state. For example, fear of pain and feelings of vulnerability were present in most of the dataset, most succinctly illustrated by Bernice's excerpts

detailing constructs such as “broken bone feeling” and the perception that her body would “break” or “snap” due to her PR-LP. In these examples Bernice located her pain in terms of actual physical damage which accentuates the “wrongness” with how she perceives PR-LP almost as an assault on her body. She makes sense of her pain in terms of a heightened vulnerability which indicates that she may be afraid to move and is consistent with negative appraisals of pain found in persistent MSK pain (Turner-Cobb et al., 2015). This aspect of Bernice’s PR-LP experience highlights that she is scared of moving in case she damages herself which could be considered to align to the empirical evidence which shows that (Beales et al., 2016) and catastrophising are features of PR-LP (Olsson et al., 2012).

Due to the disruption in their lives, because of PR-LP, the participants in this study shared the experience of having to rely on others. This was consistently framed in a negative context by the women in this study. Importantly, this less-explored aspect of the PR-LP experience aligned with previous work which elucidates the concept of “being a burden” and the relatedness of this with negative cognitions regarding issues of personal role and identity around parenthood whilst suffering from PR-LP (Persson et al., 2013). Similarly, this reliance, for the participants in this study, was centred around their immediate family and an inability to perform tasks and activities which they had once been able to perform with ease. Reliance on others due to pain may be problematic in PR-LP as given how severely disruption to life and pain intensity was evident in this study, a link between this and how the participants viewed and valued themselves emerged. A growing body of research now highlights the relevance of this, whereby sufferers of pain and illness are confronted by alterations in their perceived notion of their self (Morely et al., 2005). This concept of negative self-appraisal is increasingly considered to be characterised by a lack of belief in the sufferers’ ability to cope with the ongoing threat of illness or pain and as such is significant for in understanding the lived experience of the participants in this study who experienced a previously documented phenomenon in persistent LBP (Osborn & Smith, 1998) thus further consolidating this aspect of the persistent pain experience.

participants made negative appraisals as to how they could cope when they compared themselves to others (see above) as well as their past selves’ ability to cope and their future ability to cope with activity. This is particularly relevant to the experience of PR-LP as it aligns to the theory of self-enmeshment in persistent pain (Sutherland & Morely, 2008). Consistent with this, the participants struggle to cope with their “ideal” or “hoped for” self may have exacerbated the establishment of psychological distress and facilitated the transition to persistent pain as the future, hoped-for self was enmeshed on the absence of pain (Morely et al., 2005). This concept of enmeshment has been shown to correlate with depression and negatively predict an individual’s ability to navigate the experience of persistent pain (Sutherland & Morely, 2008).

It is unsurprising that the participants' sense of self was impacted by their PR-LP, given the extent to which they had to rely on others during this time. Half of the participants experienced this to a significant extent and most of this reliance was centred around relying on a parent or spouse to perform essential ADLs such as driving, lifting, and moving objects as well as shopping and washing. However crucial aspects of childcare such as opening buggies and moving their children out of buggies also were impossible for the participants to do without assistance. Of note, is that this common theme was interpreted differently by the participants. One woman for example (Bernice) made sense of having to rely on her husband in the context of viewing herself as a poor spouse and parent. Her experience foregrounds the concept of being a "bad wife" and "bad mum" as well as incurring additional financial cost which her PR-LP has brought. On a deeper interpretative level however, we can cautiously advance the position that her experience challenged her concepts of self and identity. It was clear that her identity as a wife and as a parent was highly significant for Bernice and again demonstrates how PR-LP caused psychological distress. The concept of guilt in this case represents how psychological and social factors may interact with the biological components of pain and establish further negative appraisals of the self. Of course, guilt is a commonly experienced emotion and may occur in the absence of persistent pain. Yet, the significance of this devaluing behaviour has been demonstrated to be associated with illness behaviour in chronic pain and can lead to hopelessness which further impacts an individual's ability to recover from persistent pain (Tang et al., 2007). Bernice continued to rationalise her experience within the context of her relationship with her husband in a way which may provide useful insight as to how PR-LP patients experience psychological distress and what this may mean to their psychology during pregnancy. She uses the example of her disruption and experience through the concept of her husband's perspective: "and he was like 'that's not heavy at all', he was like 'you really need to care if you thought that was heavy'". This contextual alteration to her worldview could indicate that she was upset at her husband trivialising her lack of ability. This seemed to cause her distress and seemed to further compound the struggle that she had with her changing role and identity as she prepared for motherhood.

All participants in the study experienced emotional strain due to their PR-LP. This manifested across a range of cognitions such as frustration, low mood, "depression-like symptoms" and hopelessness. These findings resonated with previous qualitative interview-based work (Elden et al., 2013) which highlighted similar aspects of the experience of PGP. Specifically, the authors detail that the cognitions of frustration and sadness amongst pregnant individuals who experience PGP related to questioning of personal roles such as mothers, partners and professionals amongst this population. Whilst the authors' findings relate exclusively to the experience of PGP, the relevance to the experience of the participants in this study is underscored by the previously discussed overlapping nature of LBP and

PGP which comprise PR-LP (see also Section 2.2) Regarding low mood, for the participants in this study, this was sometimes contextualised in terms of loss of joy in normal activities which previously were pleasurable, such as social and recreational pursuits (discussed above). However, perhaps more significantly, low mood manifested in feelings which were related to perceived impending adversity such as pain and disability being so bad that one woman (Alison) felt that she could “not carry on”. This was experienced in the context of possibly requiring dramatic surgical intervention in the form of a caesarean section at the time of birth. This example demonstrated an overlapping of several themes which emerged from the participants’ interviews: disruption to life, hopelessness, and comparison with future selves. This also illustrates how the woman in question (Alison) made sense of her PR-LP in the context of extreme consequences, perhaps “worst case scenario” for the future which were not rooted in any evidence other than her significant suffering, and as such allows us to tentatively advance the consideration that she was experiencing negative cognitions which may represent catastrophising (Börsbo et al., 2010) (see also Section 3.2). However, not all the participants in this study experienced this to same extent. Another participant (Frances) made sense of the fact that she felt low mood by locating this in the context of how her PR-LP and related disability was “taking the enjoyment out of my pregnancy”. This had significant meaning for Frances as she had been pregnant before and found this second pregnancy much more distressing by comparison. The experience of not enjoying pregnancy was shared by Bernice who also suffered from prevailing uncertainty around future events. She made sense of this in a very negative context which asserted a desire to not want to be pregnant anymore, which she located within the context of “literally hating it”. This example was imbued with complexity and difficult to interpret on a hermeneutic level. Bernice clearly wanted to keep her pregnancy, but the experience of PR-LP is so upsetting that she rationalises this in terms of her pregnancy as something which is to be endured, almost resented rather than enjoyed and metaphorically wishes for a time which when she has fast-forwarded to parturition. These findings related to psychological symptoms resonate with recent work which used descriptive phenomenological analysis to (Vignato et al., 2021) highlight that individuals in late pregnancy (third trimester) may be predisposed to depressive symptoms which is related to the experience of pain, and that a fuller understanding of the nature of the PR-LP experience is as yet to be elucidated. The authors cite their previous work (Vignato et al., 2020) in that whilst approximately 44.2% of women with severe pain report depressive symptoms which co-occur with pain in their third trimester implementation of current care for these conditions may be negatively impacted by a lack of understanding of this interaction between pain and psychological distress.

It is interesting to note that one woman in this study (Catherine) experienced her PR-LP differently from the others. She seemed generally to make sense of her pain as something that was relatively

normal and even though she reported that her mood suffered as a result of ongoing PR-LP, she located this in a humorous context, laughing as she recounted how badly it had affected her. She recalled the time she was affected by PR-LP as “kind of a blur” and was focused on other health matters (hyperemesis) which took precedence over PR-LP. Despite suffering, she continued to engage in athletic activity and worked right up until she gave birth. This example is interesting as her engagement with aspects of daily life seemed to be relatively unaffected by components of biopsychosocial compromise. Of all the participants, she was least clear as to how OC had affected her PR-LP. The significance of this could mean that Catherine, as an outlier in this study is experiencing PR-LP from a perspective of strong coping strategies and is less affected by negative pain-related cognitions. She seemed less therefore in need of the beneficial impacts of OC that the other participants in this study experienced.

5.6.2 The Lived Experience of OC

All the participants in this study experienced benefit from receiving OC. The physical impact of this type of treatment appeared to produce rapid reductions in PR-LP which was associated with an increase in physical mobility and return to functional capacity. The participants generally experienced pain relief within one or two sessions of OC. These improvements were in part related to the physical manipulation which the osteopaths performed. Participants consistently made sense of this in terms of treatment making them feel more “mobile” and “supple” and as such able to return to the activities which they were so severely incapable due to their PR-LP.

These findings align to evidence which supports the use of the types of physical manipulation that osteopaths routinely perform for increasing functional capacity and reducing pain in lumbopelvic pain (Franke et al., 2014; Franke et al., 2017; Licciardone., 2009). However, more specifically to the extent that PR-LP is impacted by OC, recent work also demonstrated that through phenomenological analysis of semi-structured interviews, pregnant women experienced similar benefits to receiving OC. For example (Sheraton et al., 2018) highlighted that pregnant women felt more supple and unobstructed within their pelvic regions which related to feelings of increased readiness for birth due to receiving OC. The authors report that this related to positive emotional changes such as reduced fear, improved confidence and a more positive outlook which occurred in response to the physical benefits of OC (Sheraton et al., 2018). Whilst the focus of this IPA study was more specific to the experience of PR-LP, these findings show a similar relatedness to the reciprocity of physical and psychological changes following the receipt of OC.

To understand this relationship it is necessary to consider the unseen and tacit aspects of therapeutic interaction within OC. Through analysis of the transcripts, it was evident that the participants were generally suffering from pain which was severe and persistent until such time as they received

treatment, and all the participants reported positive benefits on their psychological distress. This distress was mediated by aspects of the therapeutic interaction in OC which seemed to extend beyond the established remit or mode of action of physical manipulation. This is interesting in the context of this study as purely physical manipulation is not supported for pain once it has become persistent (Childs et al., 2003). This is particularly relevant given how quickly osteopathic treatment seemed to mediate the reductions in pain and the return to normal life. As discussed, most participants experienced significant relief within one or two visits to their practitioner. From a biomedical perspective this is very unlikely to be related to purely physical effects of treatment as it is established that the mechanical irritation or damage to bodily tissues, which are often associated with the initiation of the of persistent pain state, would take significantly longer to heal than this (Langevin et al., 2007). Moreover, literature demonstrates that persistent pain is widely considered to be centrally mediated and thus represents significant changes and adaptations to the way that the nervous system interprets pain (a process known as neuroplasticity) which means that physical manipulation alone would be ineffective at treating this (Petersen-Felix & Curatolo, 2002). This suggests that aspects of therapeutic interaction within OC were acting to support such rapid return to normal life.

Understanding what may be occurring within the therapeutic interaction that these participants experienced is complex and given the apparent success that OC had with reducing PRLP, has significant meaning for this difficult and impactful condition. This is particularly evident given that PR-LP, if untreated or unsuccessfully managed is predictive of a range of negative health outcomes and health economic costs (Kovacs et al., 2012). However, understanding the phenomena at hand is complicated by the fact that OC is highly individualised to the patient and essentially disparate across the profession with regards to how individual practitioners address the same clinical problems (Cotton., 2013; Thomson et al., 2011). By comparison, physiotherapy which incorporates standardised protocols (primarily consisting of exercise prescription in the UK) (Frost et al., 2004) may be more straightforward to explore, as a key difference here is the quantity of therapeutic touch used in treatment. That said however, evidence from the physiotherapy profession which also demonstrates effectiveness in the management of PR-LP may still lack clarity in which components of care are affect positive change. This is due to the fact that research into physiotherapeutic care often combines traditional understandings of rehabilitative exercise prescription with adjunct therapies such as massage, pain-education programmes and acupuncture. For example, an earlier systematic review of physiotherapy for PR-LP (Gutke et al., 2015) identified fifteen RCTs which were relevant for PR-LP. The authors highlight in many studies, exercises were combined with other physiotherapy modalities, such as manual therapies, pelvic belts, and education-based protocols. Mostly, those studies reported positive

effects on pain and disability compared with a control group or to standard care alone (Gutke et al., 2015)

Specific to exercise prescription, a more recent review (Banning & Pollard, 2020) identified two out of six RCTs found solely-employed exercise to be effective for the treatment of lumbopelvic pain. Of note here is that the authors identify that these studies were only applicable to pregnant patients of specific demographics that are not representative of the broader population of pregnant patients. These findings alongside a lack of UK-specific guidance for both physiotherapy and osteopathy in the management of PR-LP highlight the need for further research into professional groups involved in the management of the condition.

For the treatment of pregnancy, osteopathy has only guiding principles from its inception in 1874 (see Chapter 3, Section 6) which have seen little alteration within successive iteration since the beginnings of the profession (Paulus, 2013; Tyreman, 2013). Broadly, this means that the given osteopath will choose from a selection of forms of physical manipulation based upon what they perceive to be the physical problem affecting their patient. Understanding this however is further confused by the fact that osteopaths themselves have highly individual styles based on preference, and belief in varied clinical constructs, to the extent that one given therapeutic interaction may vary so considerably between osteopaths so as to be distinguishable as even the same form of therapy, despite the fact that the same clinical problem is being addressed (Cotton, 2013; Gabutti & Draper-Rodi, 2014; Grace et al., 2020) (See also Chapter 3, Section 6).

What is clear, however, is that participants in this study experienced significant relief from OC and that this care seemed to operate on a level which was tacitly orientated around promoting psychological wellbeing. Participants generally experienced interactions which seemed to reverse fear of PR-LP and reduce their notions of vulnerability which facilitated return to normal life. This was illustrated by Bernice's narrative in that she contextualised her pain in threatening terms by the use of language such as "broken bone feeling" and that she was afraid to move as she was concerned that she "damage" herself further. Her report situates the reduction in these cognitions that through receiving OC she felt more mobile but also could "trust" that she would not "break anything". This improvement in her condition, like several of the participants was rooted in receiving physical treatment but also in combination with emotional reassurance which empowered her to trust her body more. Interestingly this further resonated with the previously discussed findings of Sheraton et al. (2018) in that easing of physical symptoms from OC seemed to occur alongside the mediation of psychological distress and pain related fear.

The concept of emotional reassurance was a shared experience by several of the participants in the sample. The osteopaths, in addition to performing physical manipulation, appeared (from participant reports) to cultivate a good TA which promoted an understanding of the participants' PR-LP allowing them to not just recover from physical pain but also make sense of what was happening to them. Denise's narrative illustrated this clearly in that she experienced emotional reassurance which also occurred in practical advice which allowed her to adapt to life in the face of PR-LP. Understanding what may have caused the participants' PR-LP and what could be done out with of treatment, seemed to reduce the psychological threat of their pain and this reduced negative affectivity which in turn resulted in more health promoting behaviour. Advice received during OC also facilitated a re-engagement with healthy levels of movement in addition to empowering the participants with coping strategies such as tailored exercises as well as health promoting beliefs. This supports previous studies which demonstrate that education as to the nature of painful conditions facilitates improvements in coping strategies and, as such, reductions in both pain intensity and disability (Coughlin et al., 2000; Crisson & Keefe, 1988; Harkapaa et al., 1991).

Negative pain beliefs about PR-LP were similarly reduced by the emotional reassurance and explanations which the osteopaths provided. This enabled the participants to view their pain in a more positive way, despite how debilitating it was for them. Further to this, SCEs (Turner-Cobb et al., 2015) were reduced in the participants, who through OC were able to re-evaluate their PR-LP and understand the limitations which this presented. This was perhaps best highlighted by Bernice's excerpt where she states that through receiving OC her guilt around not being able to parent her daughter had reduced and that she seemed to come to terms with the limitations which PR-LP had presented her with.

As discussed, uncertainty surrounding the nature of persistent pain has been shown to increase psychological distress (Mishel, 1999) and increase the likelihood of negative emotions and cognitions which can prevent effective rehabilitation. One aspect of the OC which the participants experienced provided them with an understanding of the cause of their pain, and that they would recover from PR-LP. This seemed to empower participants and increase their level of control and reduce avoidance-based strategies to re-engage with their lives. As a result of their PR-LP participants in the study generally had negative cognitions which conflicted with their expectations of what pregnancy would be like. This manifested as not being able to fully enjoy their pregnancy and in an extreme case led to a "hatred" of their pregnancy. OC had the effect of rapidly reducing these negative cognitions and facilitating the participants' ability to view their PR-LP and pregnancy in a more positive manner which seemed to be related to the ability of the participants to cope with their PR-LP and look forward to a more positive future. This resonated with findings from Sheraton et al. (2018) where a more positive

outlook seemed to be a benefit to receiving OC during pregnancy. A further interesting aspect of this finding, in this study, was that a more positive outlook also seemed to bring about a deconstruction of the negative appraisals of the participants' notional selves as they reconciled their limitations and became more accepting of the challenge which PR-LP had brought to their lives.

5.7 Conclusion and recommendations for future research

This IPA study explored the lived experience of PR-LP and the impact of OC on the impact of this condition. The findings of this study align with a small body of previous work which demonstrates that individuals who suffer with PR-LP experience significant disruption with day-to-day activities and psychological distress (Close et al., 2016). Similar effects in addition to negative impacts on social life were also uncovered via this analysis and have also been found in qualitative explorations of pelvic girdle pain (PGP) rather than PR-LP alone. (Clarkson & Adams, 2018).

This study highlighted that PR-LP brought changes in self-perceived role and identity which negatively affected the participants during their pregnancy. Additionally, fearful appraisals of actual bodily damage and increased vulnerability due to PR-LP were experienced by the participants in this study which seemed to establish avoidance-based strategies and engender SCEs such as guilt, mental defeat and hopelessness. These constructs align significantly to the BPS model of pain and disease (Engel, 1981) and as such add weight to the validity of this model in the clinical condition of PR-LP. From the small body of work to date which is focussed on the lived experience of PR-LP, these findings align to similar qualitative studies which highlight negative experiential affects on autonomy (Persson et al., 2013), pain related fear and subsequent behavioural change (Fredriksen et al., 2008), concepts related to role and identity (Crichton & Wellock, 2006), psychological distress, negative emotional responses (Shepherd, 2005) and mood (Doğru et al., 2018). These findings are important in understanding the impact which PR-LP has on pregnant individuals as PR-LP has been shown to affect individuals' physical and psychological health for months to many years after delivery. (Engeset et al., 2014). Previous, preliminary conceptual analysis of vulnerability during birth highlights the need for a greater understanding of how PR-LP affected individuals become vulnerable and experience threat during pregnancy in addition to how interventions may mediate this (Briscoe et al., 2016).

Current evidence supports that pregnant individuals are often exposed to uncertainty, and it serves as a motivating factor to seek alternative and complementary treatment for PR-LP when GPs and other healthcare providers may dismiss what is often very disabling lumbopelvic pain as a normal facet of pregnancy (Gaffney & Clare, 2004). This may lead to confusion and subsequent negative cognitions in pregnant populations as a significant body of work demonstrates how disabling lumbar and pelvic pain are in this population (Ollson et al., 2012; Robinson et al., 2010). However, there is a lack of specific

guidance as to how these conditions should be managed when compared to established protocols for essentially very similar models of spinal pain in non-pregnant populations (National Institute for Clinical Excellence, 2020). There is subsequently a need to support how pregnancy or the state of being pregnant should be managed compared to lumbopelvic pain generally.

To this end, this study also explored the impact of OC for PR-LP. The interesting theme of emotional reassurance emerged whereby OC seemed to specifically reduce fearful tendencies and SCEs which allowed the participants to return to normal life much sooner than would be conventionally expected given current understanding as to how therapeutic mechanisms of osteopathy itself, work to improve painful conditions (Zusman, 1986). Only a small amount of preliminary research to date has highlighted that OC may reduce fearful tendencies in painful conditions (Westmoreland et al, 2007) which is interesting as it is not understood how manual therapy alone may do this and no specific research has highlighted how this is implemented within the clinical context of treating PR-LP. Although recent evidence has shown the similar results to this study in that OC seemed to improve women's belief in their own body and emotional resilience relevant to preparedness for labour (Sheraton et al., 2018).

As discussed, (Chapter 3, Section 6) OC is disparate in praxis and philosophy to an extent that the individual practitioners may be implementing very different plans of care and clinical approaches to treat the same condition. Only a small body of work has explored conceptual understandings of how osteopaths clinically reason and manage their patients. What is known, however, further highlights the differences between styles of practitioners. Indeed, recent qualitative explorations in clinical reasoning reveal that osteopaths may operate on a divergent spectrum of reasoning, where at one extreme the patient is at the forefront of management, with the osteopath acting in "educator" and "communicator" roles and at the other extreme reasoning and management being firmly rooted in technical rational approaches of "treater" roles meaning that consideration of patient beliefs, emotions and cognitions give way to the primacy of biomechanical/biomedical considerations (Thomson et al., 2014). Further exploration has also revealed significant "quiet dissent" within the osteopathic professional community at the use of evidence informed care which is rejected in favour of historical "osteopathic principles" (Fig 3.2) (Fig-Latham & Rejendran, 2017). It is therefore complex to derive understandings of what is occurring in a typical UK OC encounter and indeed how "typical" these encounters are. That said, however, the small body of work which has to date explored this, highlights that the possible presence of unique osteopathic clinical reasoning approaches. These may differ from standard healthcare approaches and as such provide unique perspectives which can enhance multi-disciplinary decision making and the quality of patient care (Grace et al., 2016).

From the findings of this small study, OC for the treatment of PR-LP appears to be related to changes (to the patient) that are centred around the therapeutic interaction and CEs of OC in the osteopathic treatment environment. This is interesting as historically, osteopathic training in the UK has offered little in the way of psychological counselling techniques or BPS-oriented approaches. However, the effect of the treatment that the osteopaths in this study appear to be applying indicates tacit understandings of the BPS model and patient-centred care in the treatment of their PR-LP patients. Further work is therefore required to understand what these components of OC are and the extent to which osteopaths understand this interaction. Furthermore, through the identification of these factors, the question arises of whether these aspects of OC be improved upon to improve the positive effects of treatment. And, further, due to the absence of structured training on psychological principles in pain management, the possibility arises that the aspects of therapeutic interaction in OC may in some cases be tacitly misapplied and lead to exacerbation of the persistent pain state.

5.8 Study 1 Limitations

The limitations of this study include several potential factors which could impact the research. For example, my own biases as a researcher could have impacted the process. At the time of data collection and analysis I was an osteopath who held an osteopathic academic position and as such my own bias as to being in support of OC and its impact on PR-LP could have led to an interview process which framed the discussion from a more positive perspective when collecting and interpreting the data. This is possibly also true from the fact that some of the participants were receiving OC from student osteopaths, who I had trained prior to them entering the HWBA for clinical practice. This conceivably could have led to interpretive bias (Macoun, 2018), in my line of interviewing and interpretation. However, in addition to Supervisory Team meetings, the processes outlined within Chapter 2: Reflexivity, did attempt to address this.

Additionally, the recruitment of participants was exclusively from patients who were self-paying. This either occurred via paying for subsidised treatment in a teaching clinic or private practice. Perceived value is known to be affected by the act of paying for services (Demirgünes, 2015) and as such this data may not be representative of patients who receive NHS care for PR-LP. Participant socioeconomic data was also not collected which may have further impacted generalisability of findings. Similarly, the self-selecting nature of the participants in this study may have affected generalisability in that participants who either had very positive or very negative experiences of OC would have been more likely to take part in the study (Alarie & Lupien, 2021).

Given very slow uptake of recruitment and logistical challenges to data collection such as researcher time balanced against academic workload, it was not possible to coordinate patient and participant

involvement and engagement (PPIE). PPIE uses stakeholders, lay-persons and patients to advise on a range of research concerns such as question design and consent materials and is considered to be beneficial to recruitment procedures and study quality generally (Mathieson et al., 2025). This in itself may have mitigated potential bias from the fact that I was an osteopath and osteopathic academic who was researching the impact of OC in a clinical population that I had experience of helping with their pain. This study also used retrospective reports of experience which may have impacted the accuracy of the reported experience (Talari & Goyal, 2020).

As this first study used IPA, further potential limitations may have been present which are associated with this form of analysis. Small sample sizes which are required in IPA may limit the ability to make generalisable conclusions to broader demographic populations. Additionally, the inherent subjective nature of the researcher's and participants' positions can introduce bias which further impacts objectivity and generalisability. An attempt to further mitigate the impact of researcher bias in this study included in addition to discussions held via peer debriefing and a review of samples of the coding of the interview transcripts at the halfway point to establish concordance and generalisability (see also Chapter 2).

Figure 5.3: Schematic of interaction between aspects of lived experience of PR-LP

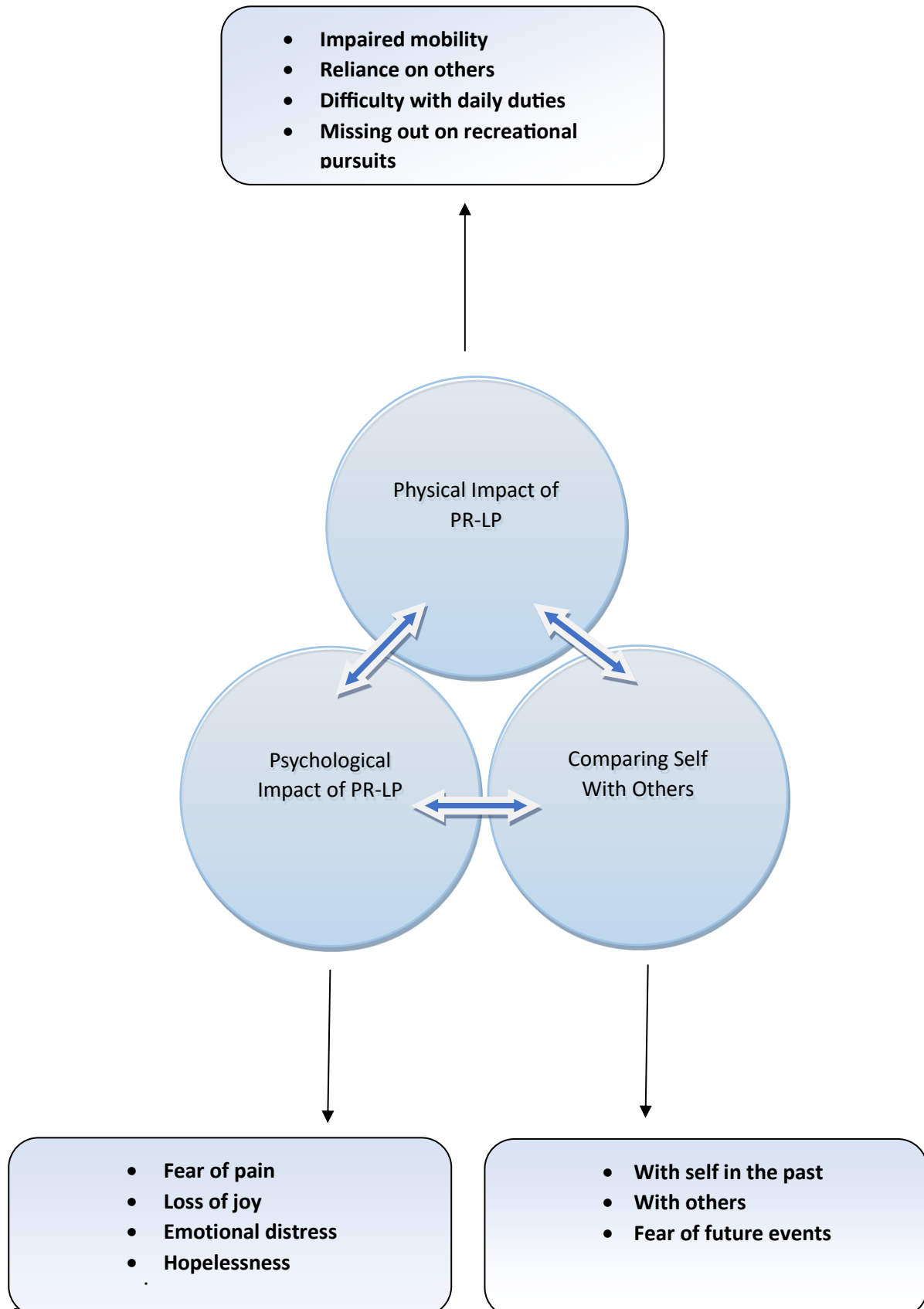
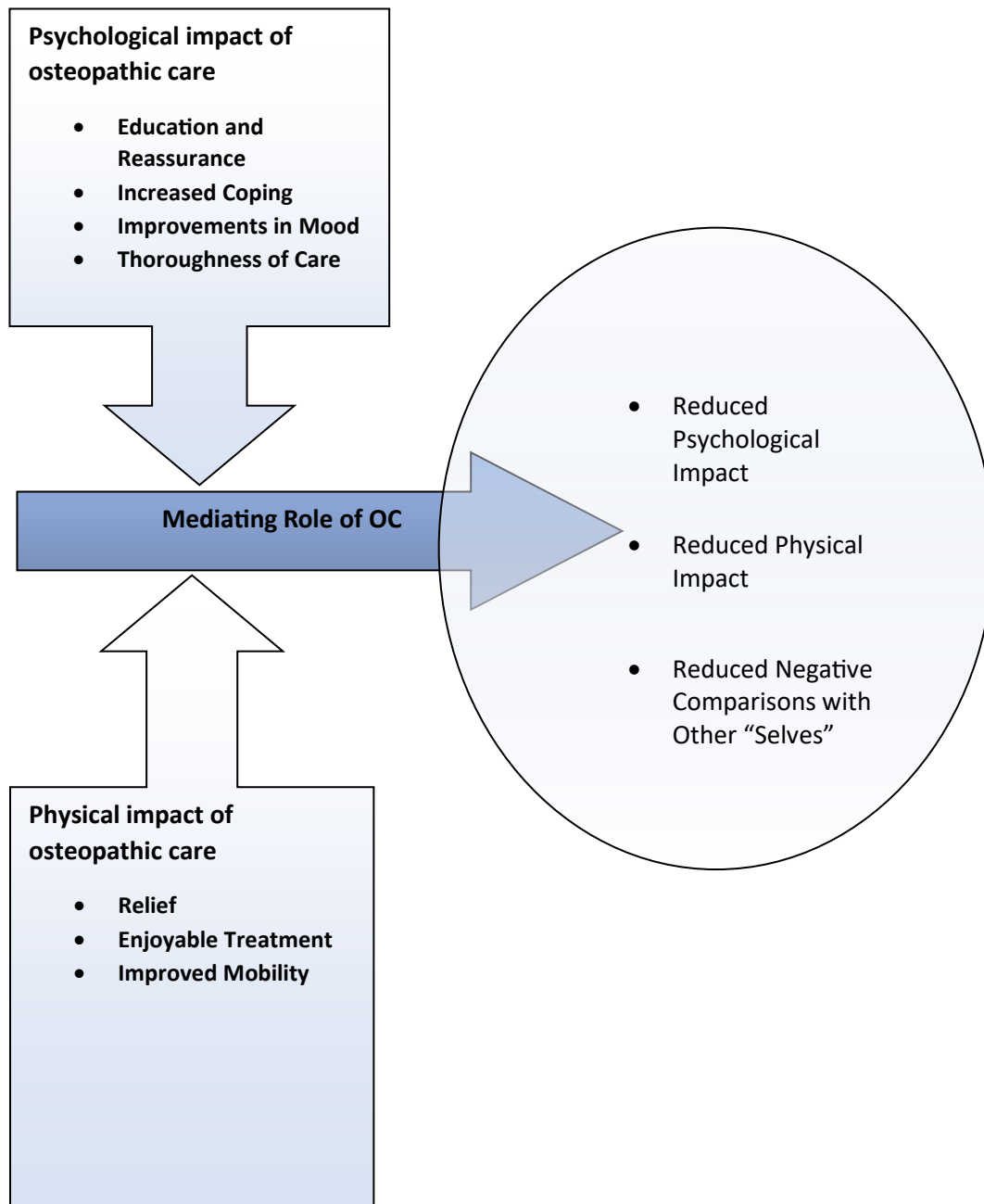


Figure 5.4: Study 1, Components of OC Acting as Mediating Factors in PR-LP



Chapter 6. Study 2: The Therapeutic Alliance in OC for the Management of PR-LP.

6.1 Introduction

In Study 1, IPA was used in a small sample of patients (n=6) who were currently experiencing or had recently experienced PR-LP and had sought out osteopathic treatment for their condition. Study 1 highlighted that the experience of PR-LP was characterised by physical and psychological factors across several life domains, which appeared to interact with negative self-appraisals regarding the patient's ability to cope with their pain presently, and in the future. These areas included significant disruption to life by way of severe physical disability which led to inability to engage with activities of daily life (ADLs), inability to move normally and perform physical tasks which included those which were essential to parenting their children, and daily chores. These findings aligned with previous work which demonstrated through empirical methods marked reductions in functional capacity due to PR-LP (Olsson et al, 2012). The women in this study also experienced a significant withdrawal from social life and recreational pursuits which was associated with the experience of PR-LP. IPA analysis revealed that the women made sense of this within the context of marked psychological distress which was rooted in feelings of increased fear of pain, vulnerability and emotional distress (Please see Figure 5.3: Schematic of interaction between aspects of lived experience of PR-LP). Within this experience, PR-LP patients reported experiencing OC as generally positive. OC was characterised by physical experiences such as rapid relief of pain, increased mobility, and the enjoyable nature of treatment. These physical experiences appeared to work in tandem and interact with psychological aspects of treatment such as education and reassurance, increased coping, and improvements in the patients' mood. Study 1 highlighted that the combination of these experiences related to reduced physical and psychological impact of PR-LP as well as reduced negative self-appraisals and increased coping (Please see Figure 5.4 Components of OC Acting as Mediating Factors in PR-LP).

The findings of Study 1 therefore suggest that the experience of PR-LP is complex and impacts the life of the patient across a range of both physical and psychological domains and that these impacts are reduced by the mediating role which OC can provide in this condition. To understand what aspects of OC may be involved in mediating PR-LP a second study was designed which thematically explored how osteopaths made sense of, and established, the therapeutic alliance in PR-LP.

6.2 Aims

The aims of this second study were to understand what the nature of OC was in the management of PR-LP. To gain access to deeper understandings of what constituted this, the findings of Study 1 linked to theoretical understandings of the therapeutic alliance (TA). The peer-reviewed literature also pointed to an exploration of the TA in this condition. This is due to the TA being commonly understood

to consist of several interpersonal processes at play in psychological treatment which can generally be considered to act in parallel with and theoretically independently of specific manualized treatment techniques (Elvins & Green, 2008). As discussed (Chapter 1, Section 3), beneficial interactions within TA are considered to promote positive health behaviours (Burns & Evon, 2007) and are associated with beneficial clinical outcomes in pain management (Lawton et al., 2016).

This second study therefore aimed to explore how osteopaths made sense of and established the TA in the management of PR-LP. This study aimed to do this via thematic analysis rather than the IPA method used in the previous study. This was principally due to thematic analysis and focus groups having an established utility in the exploration of professional groups and their inter-group dynamics (Braun & Clarke, 2006; Krueger & Casey, 2014; Morgan, 1997).

6.3 Methods

To explore the nature of OC in PR-LP, a thematic analysis (Braun & Clarke, 2006) was conducted to investigate how osteopaths established the TA in this condition. I chose a semi-structured group interview format for this study due to the inherent flexibility of this method when applied across group dynamics and interactions (Braun & Clarke, 2006). Additionally, as this study was focussed on the praxis of a professional group, I reflected that a greater number of participants would be required to answer the question to a sufficient depth. To explore how UK osteopaths established the TA in this condition I also considered using Grounded Theory (GT) (White & Cooper, 2022) as this methodology could also capture sense making and conceptual understandings of the research question at hand. However, I selected thematic analysis (Braun & Clarke, 2006) as this methodology would enable the study to explore the views of more participants and the richness of their interactions as they discussed the topic(s). Furthermore, my methodological decisions around this were informed by previous work which explored via GT, the clinical reasoning of UK osteopaths (n=12) (Thomson et al., 2014) and I wanted to minimise cross-over of similar findings which may have arisen from the individual interview format that this methodology utilised.

6.3.1 Development of Focus Group Questions

The focus group questions which establish the basis of the semi-structured interview (Fig 6.1). were developed via several processes. Initially, I engaged with a reflexive review of the findings of Study 1. This was conducted in the context of the process of review of the literature related to osteopathy, manual therapy, therapeutic alliance and pregnancy-related pain and disability (Chapter 3). Initial development was via identification of broad themes and topic areas which led to a considered refining

of each question to explore the therapeutic interaction/alliance in osteopathic care. Additionally, a reflexive review of the published guidance regarding the structuring of focus group questions (Kruger & Casey, 2015) was used to develop themes and topics which encapsulated the main findings of Study 1. This reflexivity was informed by my clinical experience of nineteen years as a registered osteopath and fifteen years as an academic, teaching areas of specialism within osteopathic undergraduate and postgraduate education which included the clinical management of pregnancy-related problems. Specific biases inherent to this experience may naturally occur and therefore the focus group questions were reviewed for appropriateness and validity by the Supervisory team and another registered osteopath with extensive clinical and teaching experience (Appendix 11).

Figure 6.1 Focus Group Questions for Semi Structured-Interviews in Study 2

Topic 1 PR-LP: Understanding the challenge

"I would like to start by asking you what you consider to be the challenges of PR-LP to your patients and how this informs what you do with your patients who suffer from this condition"

Topic 2 PR-LP: The Nature of the Challenge

"From your perspective, how do PR-LP sufferers experience their condition and how (if at all) does this differ from lumbopelvic pain in non-pregnant sufferers?"

Topic 3 Osteopathic Distinctiveness

"From your perspective, what does osteopathy offer to sufferers of PR-LP and is this distinct from other healthcare disciplines?"

Topic 4 Communication and patient partnership

"What do you consider to be the important aspects of communication and patient partnership in PR-LP, and how does this influence your care?"

Topic 5 PR-LP: pain and disability

"What is your understanding of how pain and disability impact PR-LP sufferers, and how does this influence your care?"

Topic 6 PR-LP: Fear and distress

"What is your understanding of how fear and related psychological distress impact PR-LP sufferers, and how does this influence your care?"

Topic 7 Advice and guidance: Coping strategies

"How do your patients' experiences of PR-LP influence how you engage with coping strategies in your care?"

Topic 8: Open Forum

6.3.2 Recruitment of Participants

This study used semi-structured interviews of three groups of UK osteopaths who were categorised in relation to years of experience and additional training or academic teaching experience (Fig 6.2)

Twenty-one UK registered osteopaths who had clinical experience of managing PR-LP were recruited via direct email invitations (Appendix 7) and agreed to take part in this study. These invitations were sent to osteopaths listed on the open register of the General Osteopathic Council website (osteopathy.org.uk). I selected the major cities and surrounding locales and made a list of all regions of UK osteopathic practice. This list was fed into an online randomiser (<https://www.random.org/lists/>) and systematically emailed to all potential osteopathic participants through their osteopathic practices displayed on the register. 258 osteopathic sole practitioners or clinics were contacted. Recruitment continued up until the day the respective focus groups were conducted. To ensure that a representative sample of osteopaths across the UK was contacted, these invitations were emailed to the open public register of osteopaths. I selected the major cities and surrounding locales and made a list of all regions of UK osteopathic practice. This list was fed into an online randomiser (<https://www.random.org/lists/>) and systematically emailed all potential osteopathic participants through their osteopathic practices displayed on the register. This randomisation process was followed to ensure that I did not select areas where I knew many osteopaths who I had trained or was familiar with. 258 osteopathic sole practitioners or clinics were contacted up until the day that each interview was held to achieve sufficient numbers for a focus group as outlined by Cortini et al. (2019). Additionally, all osteopathic practitioners in South-West Wales were contacted through the South Wales Osteopathic Society (SWOS), with permission obtained from the treasurer of SWOS, a registered osteopath and key staff member of SWOS (Appendix 13). Participants were invited to online Zoom focus groups, which consisted of semi-structured group interviews, through online invitations (Appendix 7). Upon expressing interest in participating, participants were provided with a participant invitation sheet (Appendix 8) and a consent form highlighting consent to being recorded by Zoom and Dictaphone (Appendix 9). The interviews explored how osteopaths made sense of and attributed meaning to their clinical actions, including assessment and treatment techniques, language, and explanations provided to patients with the diagnosis of PR-LP, informing the nature of osteopathic treatment. Data collection consisted of in-depth, semi-structured interviews conducted via online focus groups using the Zoom platform. Participants were registered osteopaths practising in the UK with experience managing PR-LP. To ensure a significant data set, the study comprised three online focus groups, each consisting of no more than eight osteopaths per group. As the project required osteopaths of differing levels of experience/level of post graduate qualification, the recruitment for

the focus groups occurred on three separate occasions with three groups of UK osteopaths of different levels of experience (Fig 6.2).

Figure 6.2: Stratification of Groups of UK Osteopaths Participating in Study 2.

- *Focus group 1: Osteopaths with 2-5 years of clinical experience which includes the clinical management of PR-LP.*
- *Focus group 2: Osteopaths with 5+ years of clinical experience which includes the clinical management of PR-LP*
- *Focus group 3: Osteopaths with additional postgraduate training which is relevant to the management of PR-LP (e.g., postgraduate certificate/ diploma or higher degree in a related subject) or osteopaths which hold a teaching position in the osteopathic educational sector.*

6.3.3. Data Collection

Participants were invited to online Zoom focus groups which consisted of semi-structured group interviews via online invitation to participate in the research (Appendix 7). An online interview platform was selected as data collection occurred at the time of the Covid-19 pandemic and previous work has demonstrated the utility of this form of qualitative data collection (Keen et al, 2022). When participants expressed an interest in being interviewed, they were provided with a participant invitation sheet (Appendix 8) and consent form, which specifically highlighted consent to being recorded by Zoom and Dictaphone (Appendix 9). The semi-structured interviews were held over 1.5 hours with a short break in the middle for comfort.

The Interviews explored how the osteopaths made sense and attributed meaning to their clinical actions which comprised assessment and treatment techniques, language and explanations provided, as well as the general approach to patients under their care with the diagnosis of PR-LP. The data from this study was recorded and transcribed verbatim. The data was then thematically analysed consistent with the process for focus groups (Braun & Clarke, 2006) to establish relevant themes and relationships.

6.3.4 Inclusion criteria

UK registered osteopaths of at least two years' experience who had direct experiencing of managing PR-LP were invited to participate. Additionally, UK registered osteopaths who had additional qualifications related to managing PR-LP and or held an academic post and were involved in teaching osteopathy were also invited to participate.

6.3.5 Exclusion criteria

UK registered osteopaths of less than two years' experience or without experience of managing PR-LP were not invited to participate in this study. Additionally, osteopathically qualified individuals but who are currently of "non-practising" status or had removed from the register were not invited to participate.

6.4 Analysis

To begin the thematic analysis process (Braun & Clarke, 2006), I first familiarised myself with the data. This process began with the transcription of the interviews and then continued with multiple readings of the entire dataset to understand the data more completely in context and capture initial impressions, ideas, and notable features of the dataset. This process was completed by hand with written notes to generate codes which occurred in the data and had potential relevance to the research question). I then used a colour coded system to systematically organise codes into potential themes. An electronic representation of this can be seen in. Themes were then reviewed via an iterative and reflexive process to ensure relevant alignment with coded extracts and the entire dataset. As this study involved three interviews of UK osteopaths of varied levels of experience, the reflexive process informed the in-vivo focus of the interviews to some extent. The order of this was not systematic and the middle group of osteopaths (EXP) was interviewed first, followed by the most experienced group (AC) and lastly the early career group (EC). This meant that when conducting each successive interview my focus on specific areas and the nature of prompting and probing questions was informed, to some extent by a deepening understanding of the TA of OC within PR-LP. This is consistent with the reflexive TA approach (Braun & Clarke, 2006) The final phase of the data collection involved selecting notable examples, conducting a final analysis of chosen extracts, linking the analysis back to the research question and existing literature. This then proceeded to a generation of the report of findings (See Section 6.5). Following the final stages of the Iterative process of thematic analysis coding (Braun & Clarke, 2006), I subjected the data to a reflexive, inductive review. This was conducted in context of the relevance of constructs which occurred, both considering the peer review literature and further informed by my clinical experience as an osteopath. Codes which lacked relevance, in the context of the entire data set, were rejected. Codes which had significant overlap were either merged to the code which had the most relevant name or merged into new codes (indicated by *) which contained the relevance and meaning of the codes with had significant crossover within the dataset.

6.5 Findings

The findings of this study indicated that the TA of OC in the management of PR-LP was established across a range of domains. Specifically, these were grouped into 5 themes: Theme 1: Autonomous Practice, Theme 2: Communication and Reassurance, Theme 3: the Osteopath as Educator, Theme 4: Patients' Perspectives and Theme 5: Osteopathic Identity. These themes were named according to their coded excerpts from the three semi-structured interviews which comprised Study 2 via the reflexive iterative process of thematic analysis (Braun & Clarke, 2006).

Figure 6.3 Themes and codes Study 2

Theme 1: Autonomous Practice

Codes/subthemes:

1. Regional inter-dependence
2. Physical outcomes as context
3. Managing risk
4. Adaptability

Theme 2: Communication and Reassurance

Codes/subthemes:

5. Communication and reassurance*
6. Time and trust*
7. Language and meaning*
8. Compassion *
9. Empowerment
10. Connection to the baby

Theme 3: The Osteopath as Educator

Codes/subthemes:

11. Managing expectations
12. Normalising pregnancy and pain
13. Reframing the advice of others
14. Offering explanations
15. Modify activity
16. Agency

Theme 4: Patients' Perspectives

Codes/subthemes:

- 17. Reflective Practice *
- 18. Practitioner limitations
- 19. Women's isolation
- 20. Women's role
- 21. Emotions

Theme 5: Osteopathic Identity

Codes/subthemes:

- 22. Primacy of touch
- 23. Perceived dialogue with body tissues
- 24. Mystical connections to healing
- 25. Perception of Osteopathic Uniqueness

6.5.1 Theme 1: Autonomous practice

This theme captured the aspects of how the osteopaths established the TA via concepts related to being independent primary care practitioners. Clinical judgement decisions including patient examination, triage, diagnostic reasoning and practitionership out with a hierarchical model, such as the NHS, were evident in how the osteopaths established therapeutic relationships with their PR-LP patients.

6.5.1.1 Regional interdependence

As this concept was developed by the group(s), osteopaths frequently affirmed a relationship between how the interconnectedness of physical changes that their patients' bodies underwent guided management. This manifested in reasoning which is consistent with the osteopathic principle of "structure and functioning being reciprocally inter-related" (See Chapter 3, Section 6).

How the patient's body responded to pregnancy seemed to guide which regions the osteopaths devoted their clinical attention to. Below Ola describes focussing more on the pelvic region in her pregnant patients due to her understanding of how that region would become "biomechanically" strained as the patient's pregnancy developed:

I will personally tend to do a lot more work onto like the pelvic muscle floor on the person that is pregnant than on other people. I think it's also, it's just me having a misconception as well. I could do the exact same work on one that is not pregnant. Just because of the biomechanics, I would tend to use those techniques more onto someone that is pregnant. Ola (EC)

The inter-relatedness of how the women's bodies underwent the changes of the developing pregnancy also featured in how the osteopaths sought to change behaviours which were detrimental to the persistent pain state. Lexie (below) looks beyond the biomechanical, to situate herself within an understanding of how she sees physical changes as influencing illness behaviour:

So when someone has fear avoidant behaviour, and they end up adapting their movement for a certain purpose. Identifying any compensatory patterns in other areas of the body that might be causing any discomfort. Lexie (EC)

Okay that's interesting. So, you feel that your techniques are working to impact the behaviour?
I

Yes, in a way. But also, trying to eradicate any compensation that has arisen and almost retraining and using exercises, to show how a lady might achieve the same action, or activity, by using their low back or pelvis differently, given their new circumstances. Lexie (EC)

Here, Lexie establishes a therapeutic dialogue by attempting to relieve, with osteopathy, physical changes in her patient which she feels are contributing to the mental state (fear avoidance) of her patients. This is initially rooted within a perceived understanding of how the physical stresses of pregnancy (biomechanical) interact with other anatomical areas (regional interdependence). However, Lexie seems to frame this understanding within a construct of non-duality of the body and mind; asserting a therapeutic input which influences this relationship.

The importance of traditional osteopathic concepts such as postural examination, biomechanical considerations and regional interdependence varied considerably between the three groups of osteopathic practitioners. Indeed, much talk from the data in the EC group was focussed on these technical and mechanistic understandings of therapy. However, within the experienced osteopath group (EXP), rather less focus s on these understandings was shown. Instead, the EXP group seemed to begin their discussions regarding the initial aspects of management, with a focus on managing risk (see Section 6.3.1.3 below). Amongst the academic osteopath group (AC) however, some mechanistic understandings of regional interdependence and how technical aspects of the biomechanics of the women's changing bodies were impacting PR-LP were expressed. This focus within this group however did seem to be more centred around being adaptable (see Section 6.5.1.4) or not "routine" to the

changing demands of clinical care in PR-LP. The AC group also highlighted this as one example of osteopathic professional identity (see Section 6.10.6 below) The two comparative examples below illustrate this:

I think that if I get a pregnant woman presenting with low back pain, I do a lot of exercise based giving, because obviously they have got to manage the symptoms outside of the clinic...to build up that strength, to sort of stabilise those joints long term. Jean (EC)

I also wonder as well that you know, kind of where we can use our kind of expertise is in giving them more holistic approach, so I think. Potentially I think if you saw a physio with lumbopelvic pain that's what they'd be treating whereas we're just as interested in their feet, what are the dynamics there ? And what's important about (that), and breathing mechanics. Ava (AC)

6.5.1.2 Physical Outcomes as Context

The osteopaths in all three groups demonstrated an understanding of their patients' need for outcomes as context to establish that progress was being made during the treatment. This was founded in a re-affirming of the positive aspects of how physical aspects of functional pain and disability were being improved through osteopathic care. This seemed to be orientated around positive re-enforcement and contextualising of how symptoms had changed from previous appointments. Jean (below) also uses this to set the plan for future appointments:

So obviously in the initial consultation you'll ask which movements aggravate it, and you will kind of use those as markers. So the next time they come in, they will say they are zero percent better, but you ask them 'how is it getting out the car, how is it rolling in bed? How are you sleeping?'. And they will be like 'oh yeah, I am significantly better', 'oh yeah, it's not painful getting out the car anymore', and then you explain to them 'oh okay, that's good. We have obviously improved that. Next week, we will focus on this and so forth. Jean (EC)

6.5.1.3. Managing Risk

The osteopaths in each group affirmed a relationship with managing risk and comorbidities within their therapeutic alliance. This held specific importance during pregnancy-related care in that the osteopaths made clinical decisions as to what treatment was appropriate for specific patients as well as considering the need to refer to medical practitioners. This relationship with managing risk and comorbidities was different depending on experience. EC osteopaths, for example, were concerned with comorbid conditions which impacted the general lived experience of the patient and how this impacted patients generally, and in relation to managing the pain of PR-LP. The EXP group were concerned principally with the medical risk of miscarriage and how this may impact the possibility of therapeutic intervention via OC. The AC group exercised a more fluid form of clinical judgement in

relation to relative risk and comorbidities. Some members of the EC and EXP groups highlighted not using OC in the first trimester due to the relative vulnerability of the pregnancy at that stage. The comparative examples below illustrate these differences in clinical reasoning across the three groups:

I think it's when a pregnancy that is already causing some PR-LP, and then you have got something like chronic fatigue on top of that, it exacerbates some of her symptoms that she already had, but also adds a whole other pile on top. .Lexie (EC)

You want to know, are they in a high risk category or are they in a low risk category? I mean, you can get that from the case history but if they've had a pregnancy before, like if someone's had a few miscarriages and this is their 3rd or 4th attempt, I might be a bit more wary about treating someone (Barry (EXP)

I have a house rule that, you know, the first 12 weeks I don't see you, but going back to what we're talking about with. How it affects their lifestyle... it affects their work and, of course, it affects their sport, because they want to carry on, I mean maybe not for 9 months pregnant but certainly into the first and middle trimester we want to carry on why not? It's only pregnancy you're not dying, you know. Francis (AC)

6.5.1.4. Adaptability

The ability to be adaptable to patients' needs was an important aspect of how the therapeutic alliance was established by both the EXP and AC groups. This did not feature so strongly within the EC group. This tendency towards adaptability manifested in changing the "routine" of clinical assessment for Sunny (below) in that she "reins in the palpation stuff" to give treatment which is less specific and more "general" in nature. She does this as a response to patients who are experiencing psychological stress, as a way of comforting them:

Their tissues are just so sensitive and whereas you'd normally be able to be a little bit firm with treatment and sometimes you may not be able to do that, and it may be on certain sessions, you just have rein in the palpation stuff and you have a more gentle treatment and more of a therapeutic general treatment to that person for, for whatever reason, if they're at the height of their anxiety. Sunny (EXP)

The AC group also considered that adaptability was important. However, this was more focussed on providing psychological comfort via effective listening which strengthened the therapeutic relationship. Practitioners in the AC group therefore highlighted being amenable to the changing expectations of the patients in their care and how previous experiences and narratives of treatment

may inform what they were going through during the experience of receiving OC. This also indicated an interaction with this concept from the intention of being patient centred (see Section 6.8)

It's really responsiveness isn't it? It's listening and responding in a way that allows them to express how, not only what they're going through, but how they feel about it, like Jeffrey said, like Joe said. How are they feeling, you know how is that impacting on what they're thinking about the future, so you can start to understand you know how their physical state. And those expectations, as well as their responses to their previous experiences in those type of circumstances might affect their relationship with you, their understanding. Paula (AC)

6.6.2 Theme 2: Communication and Reassurance

One of the most regularly occurring themes within the data set was Communication and Reassurance. The codes in this theme seem to show how the osteopaths demonstrate an emotional understanding and communicative connection to the women in their care.

6.6.2.1 Communication and Reassurance

Many codes formed the foundation of this theme and significant interaction between how these codes, overlapped, occurred together, and related to the context of how care was manifest in other themes. For example, osteopaths from each group reaffirmed, within the same passages of speech, codes which, whilst distinct, related to how specific and other components of the TA manifested in their care. This indicated that this theme was central to the way in which the osteopaths made sense of, and attributed meaning to, how they established the therapeutic alliance.

As osteopaths, we have so many hats, and we have so many different skills that we use, either working holistically, or working on the biopsychosocial, or doing the hands-on, the manual therapy, or if it's literally our communication skills, our advice. We do a lot of talking to patients, which other professionals don't actually, either in the case history, or when we're providing the hands on, there is a lot of communication in there as well. Alana (EC)

Alana's (EC) (above) focus on communication across a range of therapeutic application such as manual treatment or advice and exercise prescription are of importance in how she establishes the therapeutic alliance. Interestingly, this is one of many statements in the data set, where a difference or "uniqueness" (See Section 6.10.6 for a further analysis of this concept) is asserted by the osteopaths collectively. The specific difference between the osteopathic approach and other clinical disciplines is applied somewhat uncritically. For example, in this case, Alana does not demonstrate specific knowledge of "other professionals" interactions that would allow her to make accurate comparisons. This type of assertion was commonplace amongst all groups throughout the dataset. Communication also featured in the context of strengthening the patients' resolve and understanding of their

condition. In the below extract the osteopath Lexie (EC) asserts the importance of communication and the role of this in facilitating their patients' understanding of PR-LP as a central aspect of clinical management:

I often find that I might explain the diagnosis in the first section, and then you know, one treatment, two treatments down the line, they have lost their understanding of what's going on.... So I am constantly reminding them to ask questions, or for me to repeat things. I think it's really important in order to empower them and create a more open line of communication.
Lexie (EC)

Above, Lexie (EC) unveils several interacting facets of how she establishes the therapeutic alliance. She seems to tailor her approach to communication which is rooted in reminding the women in her care to continue to ask questions which she perceives will allow them to be “empowered” by the information she provides. She frames this within an understanding that offering explanations as to what is happening with their pain and that her clinical findings are will be beneficial to them.

This interaction with the theme of Communication and Reassurance is also seen to interact within the context of offering explanations (Theme 3. Code 14) whereby Linda (EXP) (below) further highlights the basis of providing reassurance as the rationale for her practice of offering explanations as to what she considers the “the right kind of treatment”. Interestingly she perceives that GPs are unable to provide explanations or reassurance of this quality due to limited time.

It takes a lot of reassurance and explanation on our parts and, just to reassure them. So it's a lot more talking, a lot of reassurance, as it is with any patient as well. It's not just them (going through it), you know. And, the right kind of treatment, we can get them feeling quite well again....things that the GPs haven't had the time to explain. Linda (EXP)

The AC group discussed communication and reassurance at length and provided involved and complex contexts illustrating how this theme manifested within their care. Francis (below) develops his understanding of communication in terms of the therapeutic alliance in terms of a comparison between what he offers via clinical communication and how this may be different or at least provide something that is lacking from standard care. He situates himself within the experience of the women in his care as being “processed” by the “system” of the NHS.

I think it comes down to communication. Historically look back at this, I mean this you can call it pathologising I call it processing. Pregnant women are processed through the system, the NHS, which comes really from the 50s, 60s doesn't it? Where they will go through this process, there is a lot of anxiety, as you say. So, in terms of that because they don't understand the

process if it's first baby, you know second child, and further they know what to expect it to some degree. So, the communication is important for that. Francis (AC).

Jeffrey (also AC) below, provides an insight into how he establishes the therapeutic alliance with PR-LP sufferers, specific to communication and reassurance. His care seems grounded in the maintenance of an ongoing communication where he at once makes the women aware of the “confines” of what he is doing as well as providing reassurance by ensuring that they can question him regarding the nature of the consultation with him during treatment. He speaks of an “openness” which he considers to be characteristic of the experience of PR-LP patients, since they have been examined multiple times during pregnancy.

I'm quite open. And It's not that I have to make them less open, but I have to tell them the confines of what I'm capable of doing I think they're quite free with their bodies (PR-LP patients) in comparison to other patients, quite liberal because of a point that was raised earlier, perhaps because they have been examined, quite routinely, quite consistently. And one way around (it) is keeping the communication going. Jeffrey (AC)

6.6.2.2 Time and Trust

The osteopaths highlighted how the concept of trust or building trust with the patient was important to their therapeutic alliance. This was more prevalent within the EC and AC groups. The osteopaths here differed somewhat in that the EC group asserted that trust was implicit in the therapeutic dialogue: “they obviously trust you a lot” (Lexie). Whereas Delyth (AC) unpacks this concept in more detail. Delyth (below), takes the position that trust will develop within the framework of being empathic and demonstrating that her compassion is genuine. She believes that this will facilitate the patient to “open up” or be more receptive to the aspects of care which are contained within her clinical management. This example is interesting as it demonstrates how communication interacted with Compassion (Theme 3, Code 8) and other aspects of this theme such as treatment time (Theme 2, Code 6).

They obviously trust you a lot, which is really great, but yeah, it's a tough one, to impart advice, when we are not entirely confident in it. But a patient of mine asked me to come to the hospital with her before her delivery, which was a really rewarding experience. Lexie (EC)

I think probably one of the things that I reiterate is the compassion side, just how much we can give because we have the time to have to understand what they're going through and show the empathy and not feel pressured to get on with it. Obviously, It depends on what kind of list

(term to denote duration of appointment) you're running, but for the majority of the case, (they) can see that is genuine and that opens them up to your treatment plan, your management plan. Delyth (AC).

6.6.2.3 Language and Meaning

Another aspect within the theme of communication and reassurance that was of importance to the osteopaths was the use of language in the therapeutic alliance. This code interacted significantly with the concept of shared meaning between the practitioner and the PR-LP sufferer, with enough regularity for these concepts to be explored together. It is perhaps unsurprising that these concepts interacted as much as they did, as the osteopaths seemed to be concerned with how linguistic construction impacted the cognitions and understanding of their patients during therapy.

I think when you see a pregnant lady for the first time, you should be really careful if you can, to not have that preconception that we talked about earlier, and how that may influence her story, if that makes sense? Rather than you just greeting that lady and then you're like 'oh you're pregnant' and then 'yeah, you're having some back pain'. Be really careful of your verbal communication as well, and not give her the wrong idea of being like 'oh no, she's judging me, saying oh basically 'I'm pregnant, I have low back pain, it's kind of normal'. Alana (EC).

Alana (EC) (above) considers the use of language from two perspectives. Initially she asserts the importance of remaining open to what the PR-LP patient is telling her, rather than leading the narrative and succumbing to the constructions of preconceptions which could impair a fuller understanding of the patient's perspective. Alana situates herself within her patients' experience and considers how the impact of word choice and language may create the perception of being judged or dismissed. In this way we can see that Alana's therapeutic intention is to be mindful of word choice and language to promote optimal TA. Similarly, Ola (EC) below, stresses the importance of trying to understand the experience of the PR-LP patient from their perspective. She seems to draw on understandings of the potential fear of disability which the women may encounter as their condition progresses. Within this context Ola highlights that being "neutral", as a method of developing this understanding, enables her to reframe maladaptive cognitions that may arise in her patients.

Making sure that you are really neutral, and then (for them) to be able to be like 'oh okay, I don't enjoy my pregnancy, and I think that I am going to be on crutches in two months' time, and I'm scared of that', and being able to give them this aspect of 'okay, well it might not be the case. That's why you're here today'. And trying to change their mindset about the pregnancy is something that really does make a change with patients. (Ola) (EC).

The AC group also considered that shared meaning was important to their therapeutic alliance. This was different from the EC group who focussed more on the nature of the language used in therapeutic discourse. The AC group, on the other hand, sought to establish a more detailed dialogue with what the patient was feeling as treatment progressed and how this related to the sensations that the osteopath was perceiving under their hands. Paula (AC) discusses how she sets “boundaries” in terms of telling patients that she does not need to know everything, especially if it would be uncomfortable for the patient to discuss. Her communication is characterised by establishing a reassuring expectation of what she essentially needs to know such as medical conditions which could impact clinical management (placenta previa). However, she also suggests that patient and gradual enquiry, at the patient’s own comfort, within the context of a “safe space” will assist with strengthening her therapeutic alliance.

Holding a safe space with the conversation, saying “it's okay you don't have to tell me everything but let's just you know, have a little look at this area of your life”, you know? Is there any therapist you're seeing, anybody else that you have worked with in the past, you don't need to disclose any details of that and, and you know, trying to understand. Where patients are perhaps a little bit more closed or reluctant ..but I do need to know if there's anything in the pregnancy like placenta previa or something like that, that's a risk for them.
Paula (AC)

Jeffrey (AC) further explored the concept of shared meaning. His example below is interesting, as while the other examples of this code demonstrated a shared meaning of cognitions and spoken understandings, Jeffrey highlights an aspect of his care which involves a shared perception of physical sensation (release) detected from his touch and felt by the patient in a reciprocal manner. By this he means that he and the patient are perceiving the physical sensations of treatment’s effect together. This aspect of his care seems to provide what he considers to be a “snapshot” of how the patient may eventually become free from pain and thus strengthens his therapeutic impact. This example below also interacts with a code in Theme 5: Code.25 Perceived Dialogue with Body Tissues.

We get more confident when patients link into these releases. You say “Oh, did you feel that, yes, I felt that”, so you can confirm those sensations in their body changing. And it's just how empowering it is when you're treating a patient that's been in pain for a while, and you're able to get them into a position where they're pain free. They give you that feedback, you feel a release and it's all happening under your hands. And okay, they may leave the consultation still back in that pain again, but they have been given a snapshot of what it was to be out of that pain. Jeffrey (AC).

6.6.2.4 Compassion

The code: Compassion also featured across groups in this theme. The osteopaths were concerned with the act of showing compassion towards the women in their care and how this compassion was perceived as a vehicle for developing the therapeutic alliance.

Jean (EC) below, highlights compassion towards her PR-LP sufferers in a general sense, meaning that the act of listening and showing “care” is important to management. She uses the example that compassionate intimations towards the women in her care are useful generally and specifically when management is slow, and they do not seem to be improving. Jean frames this in the context of the women perhaps not having this level of understanding or validation in other aspects of their lived experience, both in relation to PR-LP and in general.

just to get a bit of feedback from you, because they want to know someone is listening and cares about them, which they may not get in any other aspects of their life (Jean).

The AC group further developed the concept of compassion in their management of PR-LP. Jeffrey (AC) below, discusses the importance of compassion within the framework of how it relates to the osteopathic principles (see Chapter 3, Section 6). He stresses here how he views compassion as not simply the performing of actions which could be deemed as compassionate, but a more essential component of how the practitioners’ intention and thought underlies the establishment of the therapeutic relationship and interactions which come from this. Jeffrey highlights an element of spirituality to make sense of this construct (Buddhism), which is interesting in itself due to the relatability of this within the osteopathic triad (Chapter 3, Section 6). This example also illustrates how the codes in this theme such as Compassion interact with the codes of Theme 5: Code 25. (Perceived Dialogue with Body Tissues).

Jeffrey: Because osteopathy believes in not only working on tissues, but you're working on an individual so you'd have to build a relationship with that individual before you start to, forgive me, but be philosophical and start having a relationship with their tissues.. and it has to be genuine so compassion.. compassion is not about action it's more about thought. Okay, so if I'm talking about it in a Buddhist sense, compassion is about how you think rather than necessarily your actions, so the way you think informs your actions. Jeffrey (AC).

The AC also group developed this construct in an interesting manner, as illustrated below. A number of excerpts discussed the provision of a free check-up session post-partum, as exemplified by Ava (below). This seemed rooted in the context of empathy and a pro-active demonstration of the idea that the osteopaths were sensitive to the ongoing challenge of the post-partum stage in PR-LP and as such, devotes her therapeutic intention in a charitable way.

I'll always say to them come back and either give them a free session at six weeks, just to re-evaluate how the tissues are, and again I think it just hopefully supports them through that time they know that there's someone looking after their kind of care. Ava (AC)

6.6.2.5 Empowerment

The code of empowerment occurred across all three interview transcripts. The excerpts under this code illustrated how the osteopaths prioritised giving the patient advice and counsel orientated on the regaining of power over PR-LP's related adversity, and how this acted for the women to manage pain-related fear. Below we see how Lexie (EC) stresses the importance of establishing an open line of discussion whereby her patients are able (and reminded to) ask questions. This manifests as a certain fluency within the therapeutic process, where Lexie, whilst not allowing her patient to dictate "where the session goes" is still open to a dynamic process which attempts to ensure that the needs of the women in her care are addressed fully. This process seems grounded in facilitating more control for the women over their situation via fuller understandings of their PR-LP and the aims of therapy.

Yeah, I think having complete, or near complete knowledge or understanding of what's happening to them makes, or seems to make them, feel like they have some level of control over how they perceive their pain, especially when they know it shall be rewarding come the end, hopefully. And yeah, empowering them to ask questions, and to feel like you know, it's their time with me, that they are paying for, and that they should feel free to, not necessarily dictate where the session goes, but to steer it and help guide me in the direction that the kind of treatment they want from me. Lexie (EC)

The EXP group also considered that they empowered PR-LP patients. The context for this was rooted also in the of the code Agency (Theme 3, Code 16).

It's giving themselves a sense of agency over their own body. They've had different conversations or different experiences with other healthcare practitioners so it's kind of that empowerment empowering them and giving them that agency back. Cerys (EXP)

Similarly, the AC group affirmed a relationship with empowering the women in their care by managing the fear of "pathologising" PRLP. This was asserted in the context that pain during pregnancy is relatively normal and to be expected. Kelly (below) considers that the nervous patient is less able to relax and by addressing their concerns regarding what is normal during the experience of PRLP, then this can reflect a more positive experience for the women in her care. Her excerpt indicates a consideration of how the psychological stress, when relieved, may "open-up" the patient's body to be more amenable to physical treatment.

The patients who are tense and fearful and anxious - it becomes much harder for them to receive treatment and benefit from treatment, so if a pregnant lady is on your doorstep and she immediately feels more confident and relaxed about your ability and your treatment to help her and she's going to get more from the treatment. Kelly (AC)

6.6.2.6 Connection to the baby

A further interesting aspect of care which occurred in this theme was emotional connection to the women's growing babies. This was not considered by the EC group, but the EXP and AC groups affirmed a relationship with this construct and its relevance to the therapeutic alliance in the management of PR-LP. Rolanda (EXP) (below) explains how she works using visualisation and the women's own touch simultaneously with her application of treatment. This connection to the developing baby was further discussed by the AC group, as detailed below, where Jeffrey and Paula discuss a demonstration of understanding within their own reasoning as to their PR-LP patients' connection with their unborn babies and how they should proactively demonstrate a concern for their patients during therapy.

As i'm sitting and doing some like pelvic balancing work than I get her to put her hands on her womb, and just maybe just do a little kind of visualization of connecting through the layers into her womb and just connected with baby so when she's, yeah so, we are both connecting on some level, like that. Rolanda (EXP)

yeah I agree with Jeffrey there is more of an emotional connection because there's another being involved, that is growing and often that links to maybe a concern about the delivery, or concern about baby, perhaps. Paula (AC)

6.6.3 Theme 3: The Osteopath as Educator

This theme encapsulated codes whereby the osteopaths prioritised education as part of the TA in PR-LP. One of the most consistent contexts within this theme seems to be how the osteopaths see themselves as very different from other health care providers and report that they give very different advice and re-education as compared to standardly available care within the NHS.

The osteopaths frequently aligned their therapeutic intention with the concept of educating the women in their care. This concept focussed on a range of aspects whereby the osteopaths provided supportive advice which aimed to strengthen the women's resolve in dealing with their PR-LP. This consisted of practical advice regarding the nature of PR-LP and what could be done to alleviate it as well as offering explanations which contextualised both the lived experience of PR-LP and advice that the women had received from other clinicians.

6.6.3.1 Managing Expectations

Both the EC and EXP groups focussed on managing the expectations of the women in their care by asking what the therapeutic goals of seeking osteopathic treatment were and how this related to positive changes which could be realised through treatment. Below are examples of how the osteopaths used positive reinforcement to highlight changes in functional capacity which seemed to result from treatment (Alana) and setting expectations to deal with the unpredictable and fluctuating nature of PR-LP (Peter).

What their expectations are. Is it pain relief or is it to regain the function. So, if it's for relief, then it is important in that case, but if it's function, then we should kind of consider both...Even if next week they come and see me and are like 'oh no, I feel actually worse', that doesn't usually happen just to say, and I always say 'well at least we created a change. Change is always good'. Alana (EC)

That's what I always ask, what's their expectation of this pregnancy. They ask what they can expect from their pregnancy, is it for the whole pregnancy? Is this treatable condition that we're going to get better or progressive? Will it be resolved within the next few weeks?. That's one of the hardest things, predicting for us as osteopaths, we can say yes, this condition, it can get better progressively. Peter (EXP)

6.6.3.2 Normalising Pregnancy

All three groups engaged with the concept of normalising both pregnancy and its impact on the body as well as PR-LP. This was viewed as a positive aspect of the therapeutic alliance in that the osteopaths affirmed this with reducing illness behaviour and fear of pain. Alana below comments how she attempts to mediate the side effects of treatment such as soreness by reassuring that this is a normal part of the process. This is applied generally to the reaction to physical treatment provided during OC:

I think what, in terms of the treatment what we did is, we created change in that area and change is always good. 'We are just going to continue it from there and see how it goes on in the next couple of days'. But I usually say it gets worse before it gets better. So it kind of gives them that little kind of, calms them down a little bit, rather than them being catastrophising, 'oh no, it's getting worse, it's just going to get worse and worse'. Alana (EC)

The EXP group was more specific to the overall process of normal pregnancy being associated with PR-LP and as such, to be expected. Below we see Rolanda's perspective on this and how normalising

pregnancy and PR-LP interacts with the treatment. Therapeutic intent here aligns well to literature which demonstrates that the concept of how re-establishing a sense of ability to overcome and endure pain-related distress can reduce the enmeshment of the self (Morley, 2010) in sufferers of persistent pain.

I think what I'm doing, probably what we are all doing is I'm doing... really trying to enhance trust in themselves and belief in themselves which.... then they, realise this and this is a natural thing my body is going through and delivery is an natural thing. I work with that a lot with women, that really helping them to come back into the own inner circle and listen for their own inner voice again. Rolanda (EXP)

The AC group also affirmed a relationship with normalising both pregnancy and PR-LP. Of note was that they tended to discuss this more distantly in a more generalised way. This perspective seemed to characterise a lot of their contributions. Below, Jeffery draws on a broader theoretical understanding of osteopathic principles which underlies the epistemology of osteopathy and its principles (Chapter 3, Section 6), “Finding health” within the context of how he views establishing that pain is part of the process of pregnancy, and how this understanding may reduce the impact of PR-LP. This excerpt further demonstrates a feeling amongst the osteopaths in this study that there is something “unique” about OC when compared to other clinical providers. This is discussed further in Section 6.9.

We focus on health... so we're in a unique position where we're able to reassure patients that what they're experiencing could possibly be normal. And then when you reassure somebody that you know some aches and pains are going to be part of the process, then they can understand. They can feel much better about their situation rather than be scared, anxious about what if it's going to get worse, or if it's going to be long lasting, and so I think we offer not only the time but we offer the ability to be able to reassure patients. Jeffrey (AC)

6.6.3.4 Reframing the advice of others

One aspect in this theme which occurred with clear regularity was how the osteopaths felt that a large part of how they established the therapeutic alliance was in reframing the advice of others. This was usually in relation to advice that has been provided to the women by other healthcare providers such as midwives, GPs and physiotherapists. This related to both the findings of Study 1, whereby the lived experience of PR-LP was often characterised by women receiving advice that was not considered to be helpful by these professional groups, and by literature which demonstrates that a significant factor in women consulting CAM practitioners is dissatisfaction with standard medical care (Close et al., 2006; Hall et al., 2005).

Below we see an interesting piece of dialogue amongst the EXP group which begins with the concept of reframing the advice of others. This section of the interview highlights how many concepts overlap and converge in the therapeutic alliance as the osteopaths perceived it: For example, patients receiving advice which was perhaps suboptimal to recovery such as “put up with it”. How this contributed to feelings of isolation (Theme 4, Code 19) and how the osteopaths perceived that by reframing standard advice, often in the context of offering more time to listen and offer explanation (Theme 3, Code 14), returned the control (Agency Theme 3, Code 16) that the patients had over their suffering and ability to recover from PR-LP and engage in proactive health behaviours:

Often, the message they've been given before that you just need to put up with it. I think this, I get this a lot that they've had messages from everywhere just, this is something that is part of pregnancy just you know go with that, and then they come to me, and you know in quite a state often and I'm like 'no it's very treatable'. Rolanda (EXP)

It's giving themselves a sense of agency over their own body. They've had different conversations or different experiences with other healthcare practitioners so it's kind of that empowerment, empowering them and giving them that agency back. Cerys (EXP)

Further to this we see below how Jeffery (AC) contextualised his reframing of the advice of others by providing clarity to advice which he and the women did not fully understand. He mentions that he is aiding in “deciphering” the advice provided by other practitioners. Jeffrey here also indicates that he perceives care which is not osteopathy to be “protocol-led” and that his form of care is unhindered by “protocols”. Of note here is how Jeffrey tries to establish what the patient wants from the therapeutic outcome and then brings this back to engaging with the tissues of the body appropriately.

So, helping the person interpret some of those advice that they've got from the physio, you can tell them, I routinely tell them that exercise is appropriate, start with that one, and then build off that one, and so we can decipher the advice that they give them. And if you are protocol-led, you would move away from that connection with the patient. I think that that is probably the single most important thing that we if we forget to ask the patient, we make all manner of assumptions, and engage with the tissues inappropriately. Jeffrey (AC)

6.6.3.5 Offering explanations

Offering explanations appeared in this theme and occurred with significant frequency across the transcripts of all three groups. As the example below shows, this was viewed as part of the therapeutic alliance to varying degrees of complexity depending on the group. Lexie (EC) highlights the importance, to them, of how propositional and deductive domains of clinical reasoning, i.e., the working diagnoses, are important. It is clear to her that this provides a platform from which to

rationalise her findings and therefore offer explanations, throughout the course of treatment. This can help the women in her care understand their pain and become “empowered” by this. This excerpt also demonstrates the shared importance that the osteopaths all gave to treatment time within the TA of PR-LP.

I think, kind of going back to all what Paul said before about the appointment times, although I might not utilise the whole of the allocated time, it's very much there for questions. And I think part of the thing that I find really important is, whether I have a working diagnosis or not, to enable the patient to understand what's going on with their bodies.. So, I am constantly reminding them to ask questions, or for me to repeat things. I think it's really important in order to empower them and create a more open line of communication. Lexie (EC)

Linda (EXP) (below) develops this concept of offering explanations further in the context of explaining things more clearly to the women who (as she perceives it), have received information from outside parties which is not helpful: For example “You’re pregnant, what do you expect?”. She then states how this positively impacts the trust in the relationship she establishes with the women. This excerpt also indicates an interaction of how offering explanations interacted with the concept of establishing trust in the TA of PR-LP (Please see Theme 2 Code 6).

So I think, by the time everybody else is quite dismissive of it, of any pain during pregnancy and, like others have mentioned already. “You’re pregnant, what do you expect? It's going to be uncomfortable” . And when you're able to explain things more clearly and help them through their pain and they can feel and see results they do start to trust, they have this trust in you. Linda (EXP)

Paula (AC) also develops this concept in the context of a “responsiveness” which she feels requires an understanding about the individuals in her care; their expectations for the future and previous experiences. She highlights this as way to consider how explanations are offered within therapy. What is interesting about this excerpt is that it captures key features of OC that appeared relatable to the osteopaths throughout the interview. Specifically, this can be seen in how offering explanations interacts with the patient’s narrative, practitioner limitations and future events which align with the concept of agency.

it's really responsiveness.... How are they feeling, you know how is that impacting on what they're thinking about the future, so you can start to understand their physical state. And

those expectations, as well as their responses to their previous experiences in those type of circumstances. might affect their relationship with you. Paula (AC)

6.6.3.6 Modify Activity

One concept that arose in this theme which was specifically covered by the EXP group was modifying activity (Interestingly, the EC and AC groups did not highlight this). This aspect of the women's experience was important for the EXP group, and they asserted that pregnant women should be encouraged to continue with their activities (rather than stop them) despite PR-LP. Below, we see how Linda and Sunny (EXP) reaffirm this relationship in the context of advice which is directly different from that which was provided by the GP. Linda promotes increased awareness of bodily changes during pregnancy by accentuating that the women should not begin new types of activity but alter and adapt their engagement with activity to continue, but in a way that she demonstrates as specific to the individual in her care. Sunny, on the other hand, attempts to draw on her own experience of pregnancy and her background in sports rehabilitation to recontextualise the notion that the women "can't" do an activity; again this is reframed in terms of modification of activity. Of note is the overlap here that the osteopaths have with normalising pregnancy: again this highlights the message that the women seem to be given to stop activity.

It's postural awareness, for pregnancy and beyond, being strong in all the right places, but not stopping what you're doing. Just modifying it, now we change things, bring it down a little bit.
Linda (AC)

I always say to patients, 'modify rather than stop behaviours' .. And especially for pregnancy if it's you know, "I can't do this" and it's like, 'well have we thought about trying it this way or...?' You know, rather than stopping all activity all together. Sunny (EXP)

6.6.3.7 Agency

Throughout the interviews the osteopaths of the EXP and AC groups continually reaffirmed an understanding of how their therapeutic alliance was oriented around strengthening women's resolve to feel that they could cope with their PR-LP. This is also discussed in Theme 2, Code. 9 Empowerment, and some overlap with this and the following code is evident. The code of Agency however was uncovered from the transcripts as a stand-alone aspect of care. This is because, whilst empowerment highlighted the osteopaths' focus on improving coping strategies generally, the code; Agency, was influenced further by the concept of the women re-connecting with their own "selves" in the face of the adversity which PR-LP represented. This has relevance considering the findings of Study 1 (Fig 5.2) and the body of literature which discusses the concept of "self-enmeshment" in the persistent pain

experience (Chapter 3, Section 5). Below, Rolanda highlights how this agency and connection with the women's self is characterised by a "listening to their inner voice" and is facilitated by her intention to enhance self-belief within the women in her care. Cerys (EXP) similarly sees her role as attempting to re-establish a sense of agency for her patients, over their own bodies, and how this is done in the context of different messages and experiences which, by implication, are detrimental to the women's experience. This last aspect also can be seen to relate to the Code of Reframing the Advice of Others (Theme 3, Code 13) and further highlights how OC may be characterised by contextualising the lived experience of women living with PR-LP, beyond "hands-on" manipulation.

what we are all doing is really trying to enhance trust in themselves and belief in themselves which.... then they, realise this and this is a natural thing my body is going through and delivery is a natural thing. I work with that a lot with women, that really helping them to come back into the own inner circle listen for own inner voice again. Rolanda (EXP)

It's giving themselves a sense of agency over their own body. They've had different conversations or different experiences with other healthcare practitioners so it's kind of that empowerment- empowering them and giving them that agency back. Cerys (EXP)

An interesting aspect of how the osteopaths in this group also facilitated a return to agency in their patients was by enlisting the help of the partner or significant other person in the women's lives. Several responses demonstrated this in the EXP group. This was interesting in that this concept was largely lacking from the EC and AC groups (unless prompted, see below) and may have indicated a certain innovative *pragmatism* which came with experience at the "coal face" of clinical practice.

So sometimes I'll get the partner in the room and then tell the partner, how to massage that area, or just do something like that you know, so this is an exercise. 'Well, this is something that you (the partner) can do to help her when in pain or discomfort.' Cerys (EXP)

This aspect of the data was noted as interesting as it does not commonly form part of the repertoire of physical medicine. However, the similarity to ante-natal classes, whereby partner participation is used as a way of promoting unity and wellbeing around birth (Kakaşçi et al., 2022) was evident. As such, this informed future interviews with the AC group (Interview 2) and EC group (Interview 3). Responses showed that this was considered to varying degrees of acceptance and criticality by the osteopaths in successive interviews. For example, Francis (AC) talks more abstractly and questions the use of enlisting the help of the partner for fear that the partners may injure the patient or be ineffective.

in my experience with partners, it's a double-edged sword, because some partners can be a little bit too heavy handed or perhaps not handed enough, who knows, and so of course there's a degree of fear, with that all ... I think it's going back to what Ava said - you throw the control back at them and if they're willing as a couple absolutely then yeah do that. But you have to gauge it upon what you get at the time. Francis (AC)

6.6.4 Theme 4: Patients' Perspectives

A significant amount of talk was generated which demonstrated the importance of the patient's perspective. This was highlighted by the osteopaths as being reflective to how the patient would feel given the factors surrounding their experience of PR-LP. The osteopaths drew on their clinical experience, how they would feel in the place of their patients from an emotional perspective, and experiences of their own pregnancy (where appropriate). This was done to better understand the women's experience of PR-LP.

6.6.4.1. Remaining Reflective

This code initially established the importance to the osteopaths of being reflective, in a general sense and was characterised differently amongst the groups. For example, Paul (EC) establishes connections with this concept via the information that they gain within the clinical interview, how his patients are situated contextually in the context of PR-LP and what concerns may stem from this.

That's the thing that we're doing really. You can quite clearly see not the temptation, but you can see how that could possibly happen because of that. And to keep an open mind, and still enquire and ask all the questions. But you could see how you could fall into that area of thinking of 'oh, they are presenting with quite typical things that you see in pregnant people. Paul (EC)

Relevant to the EXP group, Sunny reflects on her own experiences of pregnancy and how ADLs can be modified to carry on in the challenge that PR-LP represents. The AC group, by contrast, situate this reflective tendency within a more theoretical and abstract basis, as they draw on teaching experience they use (Kelly) to contextualise the "normality" of pregnancy:

I can't go out in the garden and lift a pot that's 10 kilos, but I could go out and do it with help. I could go out and plant some veg, maybe from a height or maybe cross-legged. Rather than be forced to stop, you know we don't want you to stop doing things. Sunny (EXP)

I do one lecture in biomechanics so actually I'm flipping this rather than in terms of the patients, it's the education of our student osteopaths. Who when they first encounter pregnant patients in clinic some of them just get that look of abject terror on their faces and you know, the first thing I'm trying to tell them is you know pregnancy is a normal phenomenon. There is nothing actually wrong with a pregnant woman, this is a perfectly normal physiological process. Kelly (AC)

6.6.4.2 Practitioner Limitations

The osteopaths engaged with reflections on how aspects of their own selves and experience may present a limitation to their ability to care for women with PR-LP. This presented interesting facets to how osteopathic care and training is placed to help with the condition of PR-LP. Jean (EC) states that even though she assists women with PR-LP in her practice, she is unsure of certain aspects of how pregnant women should be moved and touched. The EXP group seemed to reaffirm the concept of “unreadiness” of novice practitioners of osteopathy to be able to optimally help with PR-LP, stating that undergraduate training was “basic” in this area and, as shown by Sunny’s excerpt below, that several avenues of further post-qualification training should be pursued in order for osteopaths to be able to optimally support women with PR-LP. By contrast the AC group did not consider the limitations of osteopathic care or their own ability to assist with PR-LP in any detail.

Jean: I had a patient ask me what my suggestions were on birthing plans, and obviously, I don't think that I'm sort of, well equipped to sort of give reasoning of that. Obviously, I can give advice, as she has pelvic girdle pain, so I suggested avoiding any sort of single leg, sort of learning how far she can separate her legs without straining the structures, but I don't feel that I am necessarily trained and equipped to give that advice. But it seemed that she was lacking in advice from her midwife in that area, so she was turning to me, to kind of give her pointers. Jean (EC)

Sunny: I didn't feel like I received a lot of training in pregnancy stuff, I mean we did a bit. It's interesting because when I talked to friends who were physios ...But from what I've observed physios get zero pregnant lady type stuff. I mean maybe they'll get a gynae placement if they are lucky, but you know that that's pretty much postgrad and above and you know when it should be, you know in my in my eyes, it should be an undergraduate thing. Sunny (EXP)

6.6.4.3 Patients' Perspectives

All three groups of osteopaths established reflective thinking around the narrative of the women who were suffering from PR-LP. The excerpt below from the EC groups illustrates how this group perceived that fear avoidant illness behaviour (in this case catastrophising) would be experienced by the women in their care due to preconceived ideas of how severe and disabling PR-LP could be in the extreme. This ability to consider the narrative from the women's perspective draws on the construct of "pain memories" (Meints & Edwards, 2022; Phelps et al., 2021) which may be relevant to how capable the women feel when enduring PR-LP. Furthermore, this finding aligns to the results of Study 1 whereby the lived experience of PR-LP was shown to be characterised by catastrophic thinking which led to psychological distress.

I think you do see a lot of patients sort of, who are twenty weeks in and are starting to present with this sort of lower back pain associated with their pregnancy, and obviously in their head, they are thinking 'I've still got twenty weeks to go', and they are catastrophising that it is going to get worse. They have obviously seen friends and colleagues that have been bedbound, using crutches, wheelchairs, in those later stages of pregnancy. So obviously that has a major effect upon them kind of, catastrophising that it could get to that level. Jean (EC)

The EXP and ACs group also engaged with reflections on the narrative of the women in their care. However, this was done typically from how the women may perceive the difference that they as osteopaths offered compared to other healthcare providers. Cerys (below) feels that the time offered by osteopathic appointments provides a platform for patients to share their individual narratives significantly. This concept indicated some further overlap with a perception of osteopathic uniqueness (Theme 5, Code 25). Hannah (AC), however, situates her reasoning within the treatment of the person rather than the symptom of pain.

I think that's where we are lucky as osteopaths. We have all that extra time compared to maybe the GP or other healthcare practitioners, that you know, we can really, really listen to them and they have that space to tell us that story and their experience ... particularly if they've seen lots of other people before and they've been dismissed as "Oh, this is this normal part of pregnancy". Cerys (EXP)

I think, fundamentally, we treat people don't we? We don't treat pain. people come in with all different onsets, all different histories or different stories and we sit down, we take the time to listen to the story and we work out how we are going to help them. Hannah (AC)

6.6.4.4 Women's Isolation

Osteopaths from all three groups affirmed a relationship with the women in their care feeling isolated due to their PR-LP. This tendency was consistent throughout the dataset. Two examples of this can be seen below. Lexie (EC) considered this to be the result of the women adjusting to expectations that the women felt of themselves, and that society in general imposed on them. Her statement relates to how women may not understand that many women were going through the same levels of severe pain and physical disability due to PR-LP, which added to the psychological distress which they felt with PR-LP. Rolanda (EXP), however, highlighted that the women in her care were often surprised that something could be done to reduce their PR-LP and how she addressed this by reassuring that she could offer practical help through osteopathic care.

Because of the impending new arrival, and if it's a new role for them, becoming a mother, all the expectations they have already developed, or what societal expectation has of them. I often find that the experiences they have aren't as discussed or normalised. Lexie (EC)

I get this a lot that they've had messages from everywhere. This is something that is part of pregnancy, just you know go with that, and then they come to me, and you know, in quite a state often, and I'm like 'No, it's very treatable.' Rolanda (EXP)

6.6.4.5 Women's Role

This code was derived from the data and highlighted that the PR-LP patients may be impacted by PR-LP. The EC group considered this in relation to how PR-LP patients may be affected by not being able to engage with ADLS and how their ability to carry on with aspects of parenting and their role within the family unit was impaired by the pain they suffered. Below we see an example from Sunny in the EXP group who raised the issue of the impact of not being able to care for older children due to PR-LP. This concept has specific relevance considering recent literature on identity and persistent pain (Reed et al., 2022) as well as findings from Study 1, which highlighted that the lived experience of PR-LP was beset by similar cognitions (e.g. "Bad Mum")

If they've got another child, you know if they've got a toddler or... You know the disability side of it, from general life so you know not being able to do just day to day simple tasks like housework or driving or you know "I can't pick my toddler up because my back is too bad". Sunny (EC)

The concept of women having role-related negative cognitions through PR-LP was also discussed by members of the AC group who considered this in the overarching framework of bolstering women's self-efficacy to improve coping with PR-LP, as demonstrated by Ava's comment below. This excerpt further highlights how the osteopaths felt that the time they offered acted as a platform for strategies which could enable their PR-LP patients to regain control.

Again, it's just kind of taking that time to find out, you know how this impacts you? What you know how...what we can do together to try and kind of help that and again and get the patient to, you know, be self-efficacious and take responsibility and to know that they've got some kind of locus of control so it's not all about other people from the outside, doing things to them, but they've got some control in this as well. Ava (AC)

6.6.4.6 Emotions

The osteopaths also established their therapeutic alliance with an understanding of their patients' emotional state. This was demonstrated within the data by frequent attempts to situate themselves in the mindset of the women in their care and how their emotional state would impact both their experience of PR-LP and osteopathic care itself. Below we see that Alana (EC) concerns herself with women's worries as to how their pregnancy and the developing baby are affected by the fact that they are suffering from PR-LP:

I think it's kind of what you see in society. We all have seen a person, our family friends, patients, a pregnant lady, that has back pain. And I think it's a kind of misconception as well that if you get pregnant, you will get back pain - which is not always the case. And a lot of other people who get pregnant and do not have any symptoms, they start doubting their pregnancy. They are like 'okay, I'm not getting any back pain, what is going on? Is my pregnancy okay? Is my baby okay?'. Alana (EC)

The EXP group, similarly, approached the possibility that the women in their care were suffering from psychological stress. Below Linda highlights this in relation to the combination of pain and occupational stress, which she considers may be detrimental to women suffering from PR-LP. Here she gives the example of women not having their suffering understood as they were not, as she

perceives it, “entitled” to have the impact of pregnancy-related issues being dealt with in the workplace.

So you're dealing with kind of dealing with their work situation as well - you know they weren't entitled to have pregnancy related pains dealt with, but you know, not all bosses would see it that way, and they didn't have the support from work so it's just this the stress of having to take time off work or not giving them the right a suitable chair, or something. So a lot of it was this pain was leading to stress through work. Linda (EXP)

The AC group however, considered the emotional state of the women in their care from a more in-depth perspective. The excerpt below from Ava demonstrates how they considered the women would feel in response to general feelings of additional vulnerability and anxiety which they considered to be part of pregnancy in and of itself. Of note here is how this concept interacts with other aspects of the dataset which indicate the blended nature of how the TA is established in PR-LP. For example, Ava highlights treatment time (Theme 2, Code 6) and the active listening and compassionate empathy that were coded in Theme 2, Code 8.

I think you know we have to remember that some of these pregnant patients can be quite vulnerable. Their emotions are in a kind of heightened state - they've got kind of potential anxieties and worries, so again I think we're coming in quite a good position but I'm sure physios would argue the same - that we're both aware of those signals and our communication - empathy, active listening and so on is kind of great value there but again, I think it really does come back to that time (appointment time) isn't it? That you do have time for those discussions and time during treatment and again that therapeutic approach and hands-on. (Ava AC)

6.6.5 Theme 5: Osteopathic Identity

This theme is concerned with how the osteopaths established and made sense of the therapeutic alliance within the framework of their own professional identity. The perspective that the osteopaths seem to have in how they use their clinical skills in a distinctly osteopathic way was demonstrated in several specific domains. The data shows a consistent consideration of the importance of physical touch as a vehicle for healing and a perception of ongoing dialogue with the tissues of the body, which is detected and influenced by the skill of osteopathic palpation. This is consistent with evidence which highlights the meaning which osteopaths gain from osteopathic palpatory findings (OPFs) (Sposato &

Bjerså, 2017). However, the data in this theme exposes complex nuances which the osteopaths draw from OPFs and how they perceive them to be influencing the healing process.

6.6.5.1 Primacy of touch

A lot of talk was generated from the interviews which addressed the importance of therapeutic touch in the treatment of PR-LP. This is perhaps unsurprising from osteopaths who posit that palpation and manual therapy is central to both their diagnosis and treatment. The EC and EXP groups highlight this in relation to how this aspect of therapy is a defining, and beneficial component to osteopathic care. This was often viewed in the context of comparing osteopathy to other professions who did not offer this, or indeed who offered touch but were different to osteopathic care. The AC group did compare osteopathy to other professions, often suggesting that osteopathy was different in the management of PR-LP : however this comparison was more rooted in the individualistic and tailored nature of osteopathic care (See 6.9.1.4).

Yeah, so in simple terms, for example, someone would say to me, 'what's the difference between you and a physiotherapist?'. They say oh you know, 'I've been to the physiotherapist, and it's not hands on treatment and they only give me a list of exercises, which I sometimes don't feel as if I am able to do'. So there is the perception in our area, you know, that that's all that physiotherapists do, and you say 'well that's not necessarily the case'. You might have a conversation with them that's there is this perception with them that they might just specialise in giving out exercises as a small example. Whereas the fact that we've been trained to do exercise as just one part of the tools that we use. Paul (EC)

I think the big thing is hands on. It's the hands on this, many physios, to my knowledge, don't tend to do any hands on with pregnant patients, it is just conversation and then exercise prescription or they are all sent to a class with all taught the same thing. You know, a group of mums in the same situation - that are they're taught to move in a certain way to be next to it and the business as opposed to somebody actually getting their hands on and moving things around, so I think that's.... that's a big part of what osteopathy offers, as well as our knowledge and skills, I think it's just that they're hands on and it'll feel like somebody's doing something with that whole area. Linda (EXP)

... Of going back to the time issue as well, I think that the hands on with the amount of time that we can give these people is, aain, gains our trust, I would say so, a combination of hands on time. Joe (EXP)

The importance of therapeutic touch was not considered so abjectly by the AC group. Instead, this group talked more around the psychological aspects of receiving therapy, which had some crossover

with Code. 25 Perceived Dialogue with Body Tissues (below). Jeffrey's excerpt below provides an insight into the somewhat more nuanced consideration of the importance of touch within this group.

So could I make an analogy? it's a bit like when you shake hands, and you instantly get the impression that you're receiving a handshake, or you've been given a handshake and whether it's... you know whether you're battling with a handshake... and I think the relationship with tissues is...similar to that... not as crude as that example but it's similar to that in the sense that it's not only the patient's body that is got to be in a state of receiving, but also have the confidence that.. it's been received, it's been listened to. Jeffrey (EC)

6.6.5.2 Perceived Dialogue with Body Tissues

An interesting code within this theme is that which illustrated a perceived dialogue that the osteopaths had with body tissues. This perception was affirmed by the EXP and AC groups, but not in detail by the EC group. The osteopaths in both EXP and AC groups asserted that they were able to feel changes in the tissues of the women in their care during therapeutic touch, which gave them information about the mental state and wellbeing of their patients, which would not necessarily have previously been discussed in the therapeutic encounter. For example, below we see Sunny (EXP) maintaining that she was able to detect "stress" in the bodies of her pregnant patients due to an increased sensitivity. She considers that this would sometimes guide her management, and how she touched or otherwise treated her patients. Interestingly Sunny is critical of this notion, attributing it to "witchcraft" but equally she also rationalises this with an understanding of sensitivity due to biological consequences of psychological stress such as muscular tightness and elevated cortisol. Joe (EXP) further affirms this concept by what he considers to be happening when he touches, and in tandem communicates with, his patients (pregnant or otherwise). He states that an "unlocking" of "layers" of body tissue occurs from his therapeutic touch (palpation) and the communicative dialogue that occurs during treatment.

You can certainly feel, I think some of the time of these people that feel the actual stress in the tissues, and you can feel the tissue changes themselves and how that does actually manifest with.... You know I do talk to people and say you know, not everybody carries stress on their shoulders, you know I do see a lot of people who carry it in the lower back and as a result, you know this can happen ...the tissues can feel you know they can't get a very different feel, I think, maybe I'm making it up, maybe it is a little bit of witchcraft, I don't know Sunny (EXP)

Joe: yeah I think that combination of communication and palpation, em...this isn't just pregnant patients, this is patients in general... really, really helps to unlock the layers- it's

almost kind of it's a way of. taking their focus away from painful bits. Something like much less painful because of combination of communication and palpation.

Okay, I like that. I'd like to just explore that a bit deeper with you. Okay, so when you communicate are you talking about communication and palpation together, are unlocking layers of...(I)

interrupting : Tissue (Joe EXP)

Jeffrey (AC) considers that a similar phenomenon is at play in his therapeutic dialogue when he perceives that tissue is relaxing or changing “releases” and then mentions this to the patient in terms of positive affirmation e.g., “Did you feel that?”. His therapeutic dialogue in this case is described, similar to Joe’s, in the way that a perceived change under his hands is also felt by the patient and his verbal communication consolidates the effect of this during treatment:

We get more confident when patients link into these releases. You say “Oh, did you feel that, yes, I felt that”, so you can confirm those sensations in their body changing. And it’s just how empowering it is when you’re treating a patient that’s been in pain for a while, and you’re able to get them into a position where they’re pain free.. Jeffrey (AC)

Of note is that little mention of touch formed the talk within the EC group: in fact the EC osteopaths gave very little prominence to therapeutic touch.

6.6.5.3 Mystical connections to healing

Following on from a perception of a dialogue with the body tissues, the osteopaths in the AC group offered discussion regarding how they were sometimes influenced by palpation in a way which was difficult to describe. This talk did not take up a significant amount of the interview but was notable for the unusual way it was constructed. For example, Hannah below describes some of her best therapeutic interactions as being characterised by “tuning in” to the patient which is combined by an “overwhelming” feeling of wanting to help the patient in her care. She then unpacks this feeling as being related to a “magical” experience whereby she is directed away from local tissue (“LEX”: low back muscles) to areas of clinical relevance (ribs or knee for example) without any of the established diagnostic testing or deductive reasoning that would be expected in primary care musculoskeletal medicine. Conversely, Hannah also mentions an “essence” or undefinable quality to therapeutic interaction, which by its absence is associated with less successful therapy.

I think my best therapeutic interactions have always been when I liken it to him was tuning into the patient's a hand is on. You have this overwhelming feeling you want to help this person

what find out what's causing the pain. And by interacting with the tissues and like Jeffrey said, with the patient there, relaxed and allowing you to get into issues and you get into a rhythm and it's almost you could be on the LEX (low back muscles) just working on the tissues and suddenly your eyes or your mind is just taken to the ribcage or you're taken to the knee because it's almost like this unspoken communication where there's something else we need to go into and it flows, it becomes and.... Is it magical something?. (Hannah AC)

Following on from Hannah's statements, Jeffrey picks up on the notion of "flow" which she mentions. He unpacks this from perspectives which are at least partially rooted in the esoteric. Citing biodynamic and intentional based constructs which are not aligned with empirical findings or clinically based research, he rationalises his therapeutic dialogue within a metaphysical paradigm which is characterised in part, by the undefinable.

If I could make a quick connection, when you ask the question, "what is the art of osteopathy?" and I think one sort of attempt to answer that would be flow, about reaching for flow in the consultation, in the patient interaction relationship, the continuity of care and the therapeutic application. It's flow. I mean if we believe that life is movement, then it's got a flow, you know there's gotta be some sort of vibration. And so, you know, from a microcosmic level, we can say to the patients keep moving, we can reassure them on that level, and then a micro, microscopic level. We get down to like kind of interaction like Kelly said, a biodynamic intention based.... What we've known for a long time is if you're present in the room that's going to change the vibe, it's going to change the vibration in the room compared to if you're not. Jeffrey (AC)

6.6.5.4 Perception of Osteopathic Uniqueness

Many excerpts across the dataset for this study illustrated that osteopaths established the TA in PR-LP via collaborative approaches with their patients. These approaches sought to actively listen to, reassure and comfort their PR-LP patients. A key aspect to these descriptions was that they were often framed as characteristic of the osteopathic approach and inferred that something distinct or unique characterised OC. Often, this led to comparisons with other healthcare professionals such as GPs and physiotherapists. On some occasions this perception of a unique osteopathic identity was found to be situated in the context of osteopathy being in some way "superior" to other ways in which PR-LP patients could manage their pain. This was found across all groups but most common commonly amongst the EXP and AC groups. Ava's excerpt below most exemplifies the nature of these excerpts:

Well, I would say, the one thing we've got his time I think passer and then they just physio may be restricted to sort of 30-minute list (term to denote appointment duration). And it's going to be more kind of exercise based and lifestyle advice, but I think our therapeutics,...kind of that building up that therapeutic alliance, therapeutic and touch. I think we've got more time to do some manual intervention and also then to come and give that lifestyle advice and reassurance, education, so I think we're in a good position to deliver that. Ava (AC)

A central theme of how the osteopaths felt that their identity impacted the therapeutic alliance was the concept of holism. Holism, in the context of caring professions is understood to be the practice of looking at the patient as a “whole” or the sum of the independent physical, psychological and social aspects which contribute to their presenting complaint. This concept is purported to be a crucial component of many CAM practitioners (Freeman, 2005). In the two examples below we see Ola (EC) state that osteopaths are better placed to impact a range of body systems which she feels as relevant to musculoskeletal care. From this, Ola implies that osteopathic care is superior to standard care and other allied health disciplines, in the management of PR-LP. This is further affirmed by Pete’s comment which highlights how he feels that osteopathic care is more comprehensive than other allied health providers.

I feel personally that the way we can give, like a benefit, compared to the other professions, is that with the pelvic girdle pain, we can have people that suffer from pain in the ribs, freeing a lot of other different symptoms that would have not particularly mentioned, even though they have the main complaint as the pelvic girdle pain. And I think as an osteopath we can have a better impact onto the circulatory system and all the respiratory system as well, and to help the body with all these other little compensations, which could help also the pelvic girdle pain, and deal with the person in a more holistic way. Which I think other professions might not tend to look for that. Ola(EC)

Ava (AC) further unpacks the ideal of Holism and professional identity in osteopathic care. She highlights that her skill set is competent in a range of domains from clinical triage (“we are kind of good at that medical part”), psychologically informed practice (“biopsychosocial factors”) and other aspects such as breastfeeding support. Ava uses the example where access to clinical services may have been restricted but PR-LP patients would still have been able to have some aspects of pregnancy-related care provided by osteopaths. Ava finishes this statement by linking to traditional osteopathic

tenets of the 'mind body spirit' to frame her modern examples of the benefits of osteopathic care.

So, I think in some ways we can provide a lot of that kind of. "medicalisation" <does inverted commas with fingers> and reassurance in between their visits and you know that as osteopaths, we are kind of good at that medical part, as well as the kind of other things like bio-psychosocial factors that we have, so I think there's actually as osteopaths, that we kind of treat mind body spirit, so we are treating their lumbopelvic (area) but we've also got a much broader role I think in in treating and supporting patients. Ava (AC)

The assertions to osteopathic uniqueness occurred across many different domains of therapeutic interaction across the dataset and overlapped with a range of codes such as Regional Interdependence (Theme 1, Code 1), Physical Outcomes as Context (Theme 1, Code 2), Communication (Theme 2, Code 5), Time and Trust(Theme 2, Code 6) Empowerment (Theme3, Code 9), Language and Meaning (Theme 3, Code 7), Reframing the Advice of Others (Theme 3, Code 13) and Agency (Theme 3, Code 16). An interesting aspect of this overlap was that it was frequently established in data which was coded to represent both the Primacy of Touch (Theme 5, Code 25) and Perceived Dialogue with Body Tissues (Theme 5, Code 23).

6.7 Discussion

6.7.1 Introduction

The findings of this study showed that UK osteopaths established the TA in their management of PR-LP across a range of domains. This data was thematically analysed in accordance with a reflexive approach (Braun & Clarke, 2006). Coded data was grouped into five main themes (see Section 6.7.1). This chapter discusses these themes and their codes in the context of the relevant peer reviewed literature.

6.7.2 Theme 1: Autonomous Practice

6.7.2.1 Regional interdependence /biomechanics

The osteopaths in each group reported how the importance of biomechanical considerations and regional interdependence was at the forefront of both their clinical reasoning and attempts to provide effective therapy for the women in their care. Biomechanics, in this case refers to the physical behaviour of human anatomy and how it moves within the living body (Lunghi et al., 2016). This principally related to how the women's bodies had adapted to the evolving process of their developing

pregnancy. All three groups of osteopaths appeared to initially affirm a relationship with how this concept guided their thoughts on assessment and treatment of the women in their care. Within this construct, the osteopaths were concerned with the anatomical structures which would rationally be affected by pregnancy.

However, the osteopaths in all groups highlighted a conceptual framework which they considered specific to the osteopathic therapeutic alliance. This often featured in how they made clinical decisions and approached the patients' PR-LP from a technical perspective known as regional interdependence (Sueki et al., 2013). Broadly, this concept is concerned with how the biomechanical behaviour of different anatomical regions may impact other regions distant from the reported site of pain in each patient. This is opposed to the "single muscle theory" which is considered to have influenced the care of patients in physical medicine for the last century and represents a more reductionist approach to clinical management (Ajimsha et al., 2020). This more accepted theory is postulated to govern standardised physical medicine practices in western health care and has resulted in protocol-driven approaches to rehabilitation, which focus on one body area, typically the region where pain is perceived to be coming from by the patient (Hanchard et al., 2011). The osteopaths however, considered that they established the TA in a different way which was unique to their approach. In adopting this conceptual framework, the osteopaths, across all groups, aligned their intentions to the osteopathic principles (see Chapter 2 for an outline of the osteopathic principles) of "the body is a unit" and "structure and function are reciprocally related". This led to clinical decision making and therapeutic intent that was directed towards what they considered to be a broader, more encompassing framework for care. This was broadly based on the understanding that, in accordance with osteopathic principles, the osteopaths navigated clinical decisions and treatment via this overarching premise from the outset. This was defined by osteopaths in the way that they considered themselves distinct (from other healthcare professionals) in that they would work on areas of the body which were separate but functionally linked to the area where they had detected physical issues; this was in order to relieve tension and achieve harmonious balance within the physical body. This is interesting considering current evidence which suggests that biomechanical relationships of related body areas do indeed impact clinical outcomes, which are distinct from the area of reported symptoms (Falla & Farina, 2008).

Osteopathic principles in this case are important when considering what is happening within the therapeutic alliance in the management of PR-LP. This is despite the significant amount of contention which the topic generates within the osteopathic profession itself. The nature of this debate within osteopathy is centred broadly around two positions: a more historical acceptance of the principles upon which osteopathy is founded, and, by contrast, a more moderate acceptance of the principles

considering current EBP based guidance. Cotton (2013) argues that the dilution of osteopathic principles in favour of research evidence is detrimental for osteopathy and leads to a reduction of osteopathic identity and core beliefs which are central to the execution of best practice. Cotton (2013) justifies this position by stating that the osteopathic perspective and approach and clinical results are ultimately not applicable to modern scientific enquiry such as RCTs and cohort studies. This position is centred around a critical view that modern progress is not always beneficial and that the governing principles of osteopathy, when applied correctly, facilitate a form of individualised treatment which is possessed with “arcane complexity” in favour of empirically derived best practice (Cotton, 2013)

Given the progressive professionalisation of osteopathy in the UK since the formation of The Osteopath’s Act (1993), such views may be surprising. However, the lack of integration within the NHS and relative freedom of alternative medical practice under UK common law has arguably led to osteopathy occupying a unique place within the healthcare landscape. The application of these governing principles has indeed led to a divide of epistemology in osteopathy, which is highlighted by numerous differing positions on the relevance and applicability of the principles in the modern era. Evans (2013) considers that the osteopathic principles are not suitably appreciative of modern advances in care and, as such, fail to consider new advances in technological, physiological, and psychological understandings that put patient welfare at the centre of management. Similarly, a review of the relevance of osteopathic principles has been conducted by Tyreman (2013) who questions the validity of the principles in the current healthcare landscape due to their lack of distinctiveness to osteopathic praxis and the fact that these general concepts have been embraced universally by most healthcare disciplines.

It is unsurprising therefore, given the scale of how divided the UK osteopathic profession is, that qualitative work has highlighted significant contention regarding the applicability of the principles amongst educators in OEs who train undergraduate practitioners (Kasiri-Martino & Bright, 2016). This also has specific relevance to this study, as much talk centred around osteopathic principles or an “osteopathic way” of establishing therapy and therapeutic discourse with PR-LP patients. This suggests that, despite varied uptake amongst the profession of these governing principles, a strong professional identification with osteopathy and osteopathic concepts permeated the participants’ view on how they established the therapeutic alliance. And, it is likely that these concepts were established at the point of undergraduate training.

Osteopathic clinical reasoning and the process by which osteopaths formulate decision making processes has predominately been considered to rely on a subtle sense of practised touch known as palpation (WHO 2010). This sense of palpation is purportedly able to detect abnormalities and

imbalances in the tissues of the body which are amenable to the application of osteopathic manipulative techniques, usually with the intention of soothing pain and increasing mobility (Sposato et al., 2017). The osteopaths in this study were all concerned with framing the women's condition within this therapeutic concept at the outset of therapy: for example Lexie's quote regarding working with "compensatory patterns" across the body is indicative of her use of both palpation and regional interdependence as a framework for engaging with her patients' pain. The fact that so much discussion concerned with the outset of therapy was rooted in this relationship to bodily tissues is interesting considering current evidence which questions the construct validity of this form of assessment. This is in the context of work which reports that inter-examiner reliability of osteopathic palpation is inconsistent (Snider et al., 2014) and indeed, that the postural model of physical assessment, whereby patients are assessed to have joints and body tissues out of "alignment", has consistently proven to be clinically irrelevant and refutable based on established physiological measures of anatomical assessment (Lederman, 2011). That said however, the presence and detection of osteopathic palpatory findings (OPFs) have been shown to assist significantly in the meaning of technique selection and clinical decision making, specifically; how osteopaths interact with their patients (Bergna et al., 2022). In further support of the utility of the *meaning* osteopaths ascribe to what is happening in a given clinical scenario, recent work has shown that concepts such as perceived phenomena e.g., how stiff individual vertebrae are moving under the osteopath's hand has immediate relevance to osteopaths' construction of planned clinical action (Sposato & Bjerså, 2017).

Given that osteopathic treatment has been shown to prove effective for the treatment of PR-LP in pregnancy (Franke et al., 2014; Franke et al., 2017; Liccardone et al., 2013) and in the context of the underpinning rationale for delivery of treatment being questionable, much is not understood regarding how osteopaths are achieving the therapeutic outcomes that they are doing, in the management of PR-LP. One aspect of this study which is suggested by the data is that the osteopaths are utilising perceived OPFs as an initial vehicle for interaction which may be beneficial for the women in their care. This seemed to manifest in the osteopaths establishing a therapeutic relationship by communicating the changes they perceived in their assessment of their patients' bodies as they palpably or visibly changed in response to treatment. This also applied to the way that patients reported being able to improve measures of functional capacity in response to receiving osteopathic treatment. This is interesting as the women in Study 1 reported significant and rapid increases in their ability to re-engage with ADLs such as walking, sitting, lifting, and returning to work. Therefore, whilst the entire dataset is non-homogenous (the osteopaths on Study 2 were not the practitioners of the patients in Study 1), we are provided with a snapshot of how osteopaths are potentially initiating therapeutic discourse beyond the application of osteopathic techniques. From the data, we see how

both the EC group and EXP group demonstrated an ability to do this which was similar in application. For example, Paul (EC) reported that rather than using validated measures of pain scoring such as the VAS at comparative treatment sessions, he discussed what he describes as “objective measures” of functional capacity to highlight the patient improvements which were occurring as treatment progressed. Similarly, Barry (EXP) (highlights specific activities such as sitting and walking to see how these physical outcomes may be responding to the treatment provided. Barry, however, also seems to demonstrate a more easy-going confidence with how he applies this, as he details physically engaging with the tissues in response to what his patients are saying is difficult. He speaks of a state of constant re-assessment whereby he readily responds to the patients’ needs. Irrespective of specificity/sensitivity, the osteopathic approach, when communicated appropriately seems to add positive reinforcement to PR-LP sufferers and the understanding that they are being cared for enthusiastically. The AC group in this case developed their ideas of biomechanics and regional interdependence somewhat more fluidly and in a less specific manner. Ava speaks to considering the patient as a functioning totality whereby she considers interdependent processes such as how the patient is breathing and how that impacts their PR-LP, whilst Jeffrey affirms a relationship with individualised treatment by highlighting that “whatever comes up with the patient” is more a guiding principle in his management. These differences in the formalised applicability of therapeutic alliance highlight early in the data, a closer adherence to taught principles and structured management in the EC group. This approach appears to become unencumbered by rules and specific stipulations as experience progresses. Interestingly, this trend for fluidity of approach seems to be strengthened in the AC group which may be the result of exposure to ongoing further education and the responsibility of teaching and reflective practice. This is consistent with current understandings regarding the impact of reflective practice and progression towards expert levels of skill acquisition and professional artistry within and out with of OC (Schön, 1992; Thomson et al., 2014). Despite the differences in complexity of approach, osteopaths from all three groups reported behaviour and approaches which seemed consistent with BPS-positive practise. This is evident from the data, in that they consistently report using detailed approaches which use therapeutic touch to assess and treat their patients. They seem to pro-actively use this open form of clinical reasoning whilst keeping the women involved with the therapeutic dialogue. This approach across groups appears consistent with evidence regarding positive aspects of medical care such as effective communication (Berry, 2009) and patient involvement in decision making (Epstein et al., 2004).

This nuanced and person-specific application of therapeutic alliance in PR-LP aligns well with thematic concepts which are considered to be consistent with good practice, namely; the collaborative nature of the relationship, the affective bond between patient and therapist, and the patient's and therapist's

ability to agree on treatment goals and tasks (Bordin, 1979; Gaston, 1990; Horvath & Symonds, 1991; Saunders et al., 1989). That said, the osteopaths in this study devoted little discussion to self-criticality both of osteopathy and the validity of their individual approaches. This is particularly important in that current evidence suggests that the terminology manual therapists (such as osteopaths) use in treatment may be harmful to patient's self-appraisals of bodily harm and body image, both of which can represent significant impediments to recovery (Kashyap et al., 2023). In consideration of this, further work is necessary within the professional scope of osteopathy to establish appropriate frameworks of discourse which lead to optimal patient outcomes in PR-LP.

6.7.2.2. Managing risk

A further example of how this fluidity manifested in the way the osteopaths established the therapeutic alliance is seen code 3: Managing Risk. Osteopaths in the UK are first contact practitioners and as such are approachable by the general public without the need for GP referral (GOSC, 2017). As such, osteopaths are trained to clinically triage musculoskeletal pain in the context of potentially evident medical disease that can masquerade as a musculoskeletal condition or threaten the patients' health, if not referred for ongoing medical investigation. The osteopaths across all three groups rationalised the beginning of their therapeutic alliance with the screening for problems which may have impacted the women or their unborn children. This manifested, however, in different ways depending on the groups which were interviewed. For example, both the EC and EXP groups were primarily concerned with the presence of additional conditions which could impact their patients adversely. The EC group were less attuned to this and considered comorbid conditions which were related to how the patient feels such as chronic fatigue: whereas the EXP group were concerned with the possibility of miscarriage. However, interestingly, whilst patient safety did feature in the importance of establishing beneficial therapeutic relationships, the AC group were considerably less concerned with medical pathology and focused their intention on the individual needs of patients in a fluid way. This is best illustrated by Charles (AC) who highlights how the state of being pregnant is a normal part of life and generally does not pose a significant threat to health; he views his patients as: "not dying you know?"

This observed nuance between the groups early on in the data is illustrative perhaps of enhanced clinical experience. However, osteopathic educators such as in the AC group, regularly engage with the design and implementation of undergraduate osteopathic curricula and as such are informed by reflective practice on how teaching osteopathy may influence nuanced approaches to the implementation of OC (Grace et al., 2016). It is perhaps due to engaging with teaching approaches and guiding the clinical learning of student osteopaths that this group developed this approach. The complex manner, in which the AC group are not so concerned with medical complications, may seem

cavalier at first glance but could be imbued with understandings of regularly triaging pregnant patients and the teaching of this. This, overall could be reflective of the process of technical rationality developing into professional artistry over time as pattern recognition and expert status is acquired with practice and reflection on practice (Schon, 1992; Thomson et al., 2014). This means that the EC group, in this instance, are less concerned with severe outcomes due to a lack of awareness and exposure to them: whereas the EXP groups are more concerned with medical complications as they have gained experience of caring for pregnant women in this way, and that the AC group, through experience are less immediately concerned with these outcomes, due to an increased familiarity of dealing with these clinical problems.

6.7.2.3 Adaptability

In a similar way the EXP and AC groups seemed more comfortable with being responsive to the needs of the women in their care and asserted that they were able to modify their establishment of the therapeutic alliance depending on the given needs of the women. This aspect of captured under Code 4: Adaptability. This tendency to be adaptable and modify the approach used was described by the EXP group in how they would deviate from normal assessment and treatment protocols to provide more generalised and comforting treatment to soothe women which were particularly sensitive or stressed. The AC group however, highlighted how, depending on the nature of the patients' experience, they would modify their approach in order to "throw back control" on a case-by-case basis in order to facilitate behaviours which would reduce illness behaviour and strengthen self-efficacy. The way in which the groups either did or not modify their approach appeared dependent on experience and established a difference in how they established their therapeutic alliance. From one perspective, the capability for being adaptable to the patients' needs was framed within the osteopathic triad of unification of "mind, body and spirit" (Zegarra-Parodi et al., 2021). For example, Sunny explains how she modifies her approach, in some cases eschewing formal examination procedures such as osteopathic palpation, to provide the women with a more soothing generalised form of care, as per her clinical judgement. However, from another perspective, within the AC group this adaptability was applied in alignment with the literature on coping strategies and self-efficacy, as Charles attempts to "throw back control" to the women in his care. Both examples could be seen as aligned to good biopsychosocial and patient centred care (discussed later) practice. Perhaps unsurprisingly, there was far less engagement with the tendency to be adaptable within the EC group as they may have lacked exposure to reflective incidents which could allow them to be comfortable with such fluidity in their clinical actions (Eraut, 2000).

6.7.3 Theme 2: Communication and Reassurance

6.7.3.1 Communication

The code Communication (Code 5) is interesting in the context of Study 1, as the explored lived experience of the PR-LP experiencers who were undergoing osteopathic treatment revealed that they valued the amount of spoken interaction and reassurance, which was provided by their osteopaths generally. This theme illustrates how the osteopaths in Study 2 considered that both communication and reassurance were central to how they established the therapeutic alliance in their management of PR-LP. Communication in this case represented general openness and willingness to explain and talk to the women in an un-hurried manner. This concept interacted significantly within the transcripts with Code 6: Time and Trust (discussed below). The osteopaths perceived that their form of therapy, which offered longer appointment times, was more optimal than other disciplines such as physiotherapy, chiropractic and allopathic medicine, offered by GPs. This was principally considered to be due to the osteopaths having the time to listen to, understand and reassure their patients alongside the provision of manual osteopathic treatment and exercise prescription. This adds further support to the osteopaths attempting to construct their therapeutic alliance in line with an individually tailored approach via the things they say to the women during treatment.

Current understandings on what represents good communication in care are frequently associated with patient centred care (PCC) (Thomson et al., 2013). Broadly this is understood to be a characteristic of clinical management which is “respectful and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions” (Thomson et al., 2014). The osteopaths highlighted that in their view their approach was imbued with this concept and that this characterised their therapeutic alliance. Several models of PCC have been developed which examine the nature of this type of management. For example, Mead & Bower’s (2000) “5-Dimension model” conceptualises components of PCC as “the inter-relatedness of values such as biopsychosocial perspective, patient as a person, shared power, and doctor as a person”. Beach & Inui, (2006) add to this and cite 7 “dimensions” to include: “respect for patient’s values; preferences and expressed needs; coordination of care; information, communication and education; physical comfort; emotional support and alleviation of fear and anxiety; involvement of friends and family); and transition and continuity”. PCC has been further conceptualised by Morgan and Yoder, (2012) as having 4 specific characteristics which are representative of care which is “holistic, individualised, respectful and empowering”. This aligns generally to what the osteopaths across the groups stated were the aspects of how they established the therapeutic alliance in their management of PR-LP: however, differences in experience and reflexivity may account for diverse application and criticality of how this was applied across the three groups.

Reassurance as a concept in clinical management is less well understood. However, a review by Pincus et al., (2013) highlights categorical differences between the type of reassurance which can be used in professional care. The authors highlight the difference between affective communication and cognitive reassurance. Logically, affective communication is seen as that which focuses on aspects of the affective domain such as reducing worry, establishing of rapport and the perception of being cared for, respected and understood. By contrast, cognitive reassurance is rooted in delivering patient education which changes perceptions and beliefs which are related to illness.

This research stemmed from investigations into earlier work (Coia and Morley, 1998) which argued that whilst affective reassurance was useful at making patients feel better quickly, it only facilitates temporary relief. This is thought to lead to problems when the patient begins to feel worse, as they then lack the empowered strategies to deal with their condition. Cognitive reassurance, however, is considered by Coia and Morley (1998) to be more effective at providing lasting benefits as it equips patients to develop lasting coping strategies. Furthermore, the combination of these two processes is considered to be mutually exclusive. This means that once the patient has been affectively reassured, they will lack the motivation to be receptive to cognitive reassurance which has shown improvements both in the short and longer terms (Pincus & Morley, 2001).

This has specific relevance for the findings of this study, as the osteopaths demonstrated reassurance which was characterised by interactions within both the affective and cognitive domains. Given Coia and Morley's (1998) hypothesis however, the different components of this reassurance should be mutually exclusive and therefore ineffective if combined. However, this does not align to the results of Study 1 where women reported lasting relief well into the postpartum period from osteopathic treatment, which also was comprised of both affective and cognitive reassurance. Nor does this fully capture the described nature of how the osteopaths established their TA via a mix of contemporaneous touch, advice and acknowledgement of their patients. Clearly, the findings from the data in Study 2 suggest that a complex combination of factors are occurring in the TA within the osteopathic management of PR-LP.

Specifically, the data from this study suggested that osteopaths across all three groups encouraged an open line of communication whereby the patient was reminded to ask questions regularly and was able to receive information about the differential diagnoses as well as relevant exercise prescription to help improve their PR-LP. This tendency did not vary much between the EC and EXP group, with participants from both groups providing similar information on how they established this aspect of the therapeutic alliance. The AC group, however, detailed an arguably more nuanced expression of how they provided communication and, within that, how they reassured the women in their care. For

example, Francis (AC) views communication as something that he provides that is separate from the “processing” which PR-LP sufferers and pregnant women go through in general during their attendance at NHS appointments. Delyth further details that she considers communication to be affected by more subtle aspects such as her intent towards the women in her care. She talks subtly of emotions and non-verbal communication and how she feels these aspects of the therapeutic alliance are important to her management.

Much of the talk which was generated, in how the osteopaths viewed the importance of establishing these lines of communication and openness with their patients, was directly asserted to be rooted in the concept of PCC. This thematically linked to Thomson et al.’s (2014) definition of remaining “respectful and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions”. The osteopaths attempted to situate themselves within the women’s perspective to consider how they were experiencing PR-LP. Discussion concerning this was allocated a code in Theme 4: Patients’ Perspectives, where specific examples are discussed. However, the link to this concept across the data set is aligned with open communication and reassurance as well as how the osteopaths established the oft-mentioned concept of how they considered the osteopathic care to be distinct in offering something to the therapeutic milieu which, by comparison did not feature in the care of other practitioners who dealt with PR-LP, such as GPs, physiotherapists, nurses and chiropractors (see also Theme 6. Code 27)

6.7.3.2 Time and trust

The osteopaths frequently considered the notion that establishing trust was a feature both synonymous with osteopathic care and something that formed an essential aspect of how they navigated the therapeutic alliance in PR-LP. The talk which focussed on establishing trust was rooted in a range of assertions as to how this manifested within the therapeutic alliance. Some practitioners, for example, Sunny (EXP), took the position that trust was built through open communication where the opportunity to ask questions and have them answered was always available to the women in her care. Delyth (AC) considered that trust was the result of compassion demonstrated by her within the time where therapy took place. Lexie (EC) stated that “they (the women) trust you a lot, don’t they?” but was less clear regarding how that trust was established. That said however, all the osteopaths who considered trust building as an important factor in PR-LP grounded this within the tendency of osteopathic care to have sufficient treatment time, specifically within the concept of this time being additional and therefore superior to the appointments which the women would encounter with other practitioners involved in the management of their patients’ PR-LP.

The idea that effective trust building between patient and practitioner is an important aspect of good therapy is logical and that the absence of this trust is associated with poorer outcomes and satisfaction is likely irrefutable. However, trust does not always feature as a therapeutic priority within clinical management generally and especially within the therapeutic relationship of physical medicine. To date no specific work has featured on trust building specifically in osteopathy, and the majority of research which explores this is within the field of psychotherapy. Kleiner et al. (2023) highlight that the profession of physiotherapy is only beginning to understand and investigate the nature of relational trust's importance, and indeed how models within psychotherapy may not be immediately applicable due to the use of touch, in physiotherapy which is (mostly) absent from psychotherapy. The fact that the osteopaths repetitively assert that the amount of time they spend with the women, which affords them the time to listen to their concerns and communicate to establish trust, may have relevance considering previous research. For example, Close et al. (2006) highlight that a factor which influences pregnant women to seek alternative and complementary therapy is their dissatisfaction at not being "listened to" by their doctors and midwives. Specific to pelvic pain (PP) during pregnancy, Morgen et al. (2010) demonstrate that women who suffer from this condition have a fear of not being believed regarding their symptoms and that mistrust can emerge from the therapeutic dialogue between women and their midwives and negatively impact the experience of being pregnant whilst suffering from this condition. It is however acknowledged that PP in this case does not by universal standards fit into the broader definition of PR-LP (please see Chapter 2 for a discussion of the nature of overlap between the regional aspects of LBP and PP in pregnant women).

With regards to the amount of time that the osteopaths spend with the women in their care, it is harder to gauge how universal this would be for UK- based osteopaths. During the interview of the EXP group, all participants, at one point, stated that their appointments times were 45 minutes. Arguably this is significantly longer than the average GP consultation of 10 minutes (Healthwatch, 2023) as well as more than twice the amount of time that would be offered by NHS physiotherapy at 30 minutes (South Tees Hospital, 2022) and chiropractic appointments (less than 30 minutes) (Phillips, 2023). However, given this small sample it is difficult to state how long osteopaths across the UK actually spend with their patients, although current statements in the public domain make reference to a typical osteopathic appointment time of between 30-45 minutes (NHS, 2024).

6.7.3.3 Language and Meaning

A further aspect of the theme of Communication and Reassurance which occurred was the use of language. How this formed part of the therapeutic alliance was principally illustrated in how the osteopaths used encouraging language to establish an open characteristic to the dialogue. Much talk

was focused on using language which “set boundaries” to what the therapeutic dialogue should contain. For example, Alana (EC) (PP) urged caution with verbal communication so as not to appear judgmental and give the women in her care the impression that she was assuming that the state of being pregnant was routine or predictable in some way. She also states that she did this to not influence the patient’s narrative and as such prejudice the therapeutic dialogue.

Similarly, Ola (also EC) prioritised the establishment of open dialogue and language to gain understanding of what the women’s lived experience was and what their fears and concerns for their ongoing pregnancy may be in the context of suffering from PR-LP. This aligned generally to the concept of active listening. Broadly, active listening, applied to therapeutic dialogue, is the practice of not interrupting and asking meaningful, open-ended questions and the application of a range of interviewing techniques to allow access to the patient’s narrative. This approach has been associated with proposed increases in empathy which lead to better outcomes in PCC (Salmon et al., 2011; Thomson et al., 2014). However, the osteopaths in the EC group demonstrated an understanding of this generally without further clarification as to specifics of this approach, suggesting that they were aware of this concept without more in-depth knowledge. Amongst the AC group, some talk established a more detailed understanding of this concept and how it may gain access to the women’s narrative and what the meaning of this narrative was for the patient. For example, Paula situated herself within the patient’s narrative and the potential impact of how previous emotional or sexual trauma may have impacted the clinical picture. This dictated how she approached the patient and facilitated nuanced modification to management such as creating a “safe space” where the patient did not feel obliged to discuss things or disclose the entirety of her medical history if she did not feel uncomfortable.). Jeffrey further unpacked this concept of establishing shared meaning through open communication which was linked to affirmations of physical change as his hands worked on the women in his care. This concept is particularly interesting within the dataset when we consider the codes Primacy of Touch and Perceived Dialogue with Tissues (see Theme 5) as it indicates how this professional group incorporate the therapeutic dynamic related to the touch-based aspects of osteopathy within the PCC framework, about which very little is understood to date.

Of interest was that none of the participants across the three groups commented on specific terminology of language used in the therapeutic dialogue. Osteopathy, like chiropractic, has retained patho-anatomical terms which are ubiquitous in training undergraduate programmes and textbooks. These terms often describe how elements of anatomy have become altered due to physical stresses (Chila, 2010) and are routinely used to describe to patients what has happened and the rationale behind the application of manipulative techniques. Specific to the low back and pelvis a range of terms such as “rotated”, “twisted” and “subluxed” are used to inform palpatory literacy and the application

of specific therapeutic forces. This presents a significant issue for the future of these professions as with advances in cadaveric dissection (McGrath, 2004) and medical imaging (Kibsgård, 2015; Sturesson et al., 2000), a growing body of work demonstrates that these perceived anatomical relationships are erroneous in addition to being negative or engendering of nocebic responses in patients which impact psychological health (Hohenschurz-Schmidt et al., 2022). Therefore, further understanding of the level of criticality being applied to the language used in OC for PR-LP would be meaningful and useful in understanding how this facet of management is applied in osteopathy and PR-LP.

6.7.3.4 Compassion

The osteopaths in the EXP and AC group asserted that they attempted to establish a feeling of accessible and compassionate support with the women in their care. The EC group did not significantly do this. It is evident from the excerpt from Linda (EXP) that she understands the need to reassure the women in her care that she will support their health needs after their baby is born. Similarly, Rolanda (EXP) also prioritises the need to establish continued care post-partum. The AC group orientated their ongoing support with highlighting that they would counsel the women to continue therapy should they need it after their baby was born, by offering check-ups at set intervals to ensure that PR-LP did not continue to impact the women. In one example (Ava) these check-ups and treatments were offered free of charge. Consistent with the literature on pregnancy and pain, this tendency to offer ongoing support as part of a clinical management plan post-partum speaks to the osteopaths' understanding that PR-LP may have detrimental consequences after birth (Ollson et al., 2005). This code was also seen to interact with other codes in the dataset such as Communication (Theme2, Code. 5), Time and Trust (Theme 2, Code. 6) Language and Meaning (Theme 7, Code. 7) and Empowerment (Theme 2, Code. 9) and provided a contextual understanding of how the osteopaths asserted their TA to be.

6.7.3.5 Empowerment

The code Empowerment appeared significantly in the dataset. The osteopaths here affirmed a relationship with promoting positive change in their patients to facilitate their ability to deal with and reverse illness behaviour which, as they perceived, was consistent with the fear avoidance (FA) model (Crombez et al., 1999; Wadell et al., 1993). (For a review of the FA model and relevance to PR-LP, please see Chapter 1). The osteopaths in this study identified specific components of the FA model such as catastrophising and pain related anxiety and fear and in doing so stated that they provided support which empowered and allowed their patients to better cope with this. This was seen to interact strongly with the associated code of Compassion (Theme 2. Code 8) in that the osteopaths

from each group stated that they expressed compassion towards the women's suffering in a manner that was intended to be personal and comforting. This finding presents an interesting question in terms of the osteopathic management of PR-LP as the osteopaths across groups did not appear to distinguish between the domains of cognitive and affective reassurance as described by (Coia & Morley, 1998): rather, they grouped these forms of reassurance together to empower their patients towards overcoming avoidant illness behaviour that resulted from their pain experience. If indeed these two forms of reassurance are mutually exclusive as stated by Pincus et al., (2002) then greater awareness amongst this professional group of the clinical impact of reassurance is required. However, despite this, the findings of Study 1 showed that patients experienced rapid, significant and crucially; *lasting* relief, from short courses of osteopathic care for PR-LP. This finding in context would therefore require further understanding of the impact of the perhaps unique, therapeutic dimensions of osteopathy and how they influence the delivery of supportive reassurance in the management of PR-LP and other conditions.

A recently developed field of inquiry may provide some insight as to what is happening in the therapeutic dialogue which is potentially distinct to osteopathic care, or at least therapies where the spoken dialogue is congruous and punctuated by therapeutically intentioned touch. The concept of interoception or how the sense of touch and the body interacts is a well-recognised process. This process links mental representations within the brain to experiences and is known as "feelings of the body" (Craig, 2009). A growing body of work has investigated this phenomenon and neuroscientific research has demonstrated the concept to be quantifiably measurable. For example, interoception is measured via questionnaires and perceived phenomena such as heart rate in addition to changes in the brain seen on MRI (Chen et al., 2021). Importantly these phenomena are shown to be altered in persistent pain (D'Alessandro et al., 2016). Preliminary work has demonstrated that manual therapies, specifically osteopathy, have been shown to alter this activity and return it to a situation more consistent with normal (Pasin Neto et al., 2021). The process is also understood to be impacted by emotional changes (Zamariola et al., 2016). This process is not fully understood however, MRI studies suggest that the interaction between key areas in the brain responsible for cognitive function interact with touch to facilitate a return to less painful, sensitised states.(Cerritelli et al., 2021). What is interesting about the results of this study is that the osteopaths, whilst perhaps naive to the concept of interception, seemed to perceive that their interaction through combined touch and communication seems to facilitate healing in their patients. This occurred with more frequency in the EXP and AC groups generally and much talk affirmed the emotional interaction of the practitioner applying therapeutic touch to the patients who were suffering pain as they talked to and reassured them. The nature of these relationships and how the osteopaths rationalised their approach is

discussed in more detail in Theme 5: Code. 24 Primacy of Touch and Code. 25 Perceived Dialogue with Body Tissues.

A further aspect of the osteopaths interacting with the women in their care, on an emotional level which was characterised by tactility and affective reassurance, occurred in the data in this theme. This is demonstrated in Rolanda's (EC) excerpt regarding increasing connection to the unborn baby. This occurred as an isolated incident; however, the nature of the description is worthy of note as it demonstrates a certain freedom with which the osteopaths were able to act within their own scope of practice. This interesting excerpt shows how the osteopaths considered the connection to the patient's growing baby whilst still in utero. The intention here seems to capture some of the aspects of interoception and touch, but goes beyond to include the baby, who is at once part of the woman's body and separate. Here the osteopath is defining their therapeutic alliance in a novel manner which aligns to understandings of patient centred care (PCC) which are holistic and individualised as described by Morgan and Yoder (2012). Furthermore, it could also be said that the novelty of this approach may be considered an application of osteopathic principles with regard to the relationship between mind-body and spirit (Zegarra-Parodi et al., 2019) The concept of spirit in this instance may be regarded as aligning to the non-dualistic blending of mind and body which was both central to osteopathic philosophy and is considered to be relevant to current understandings of psychoneuroimmunology which are emerging in the field of patient care (Lloyd & Dunn, 2007).

6.7.4 Theme 3: The Osteopath as Educator

The osteopaths frequently discussed how they established their therapeutic alliance within PR-LP management via the concept of education. The codes which aligned to this were aggregated under the theme The Osteopath as Educator. This idea took the form of a range of different concepts, such as: managing expectations, offering expectations as well as reframing the advice of others. Additionally, the osteopaths in each group identified that they spent significant time within therapeutic interaction, which was devoted to normalising the state of being pregnant and PR-LP itself. These components of this theme were typically done with the intention of showing the women that the lived experience was not insurmountable, and they shouldn't feel as threatened by PR-LP as they did. Further advice was also offered within this educational framework which focused on the practical aspects of how they could cope with their pain in the day to day by modifying their activities, continuing with ADLs and, where relevant, enlisting the help of their partner.

6.7.4.1 Managing Expectations

The concept of managing patients' expectations arose multiple times in the data set. This was most prevalent in the EC and EXP groups and is illustrated by Alana's and Peter's excerpts.

These findings show that the osteopaths' therapeutic alliance is centred around what a patient wishes to gain from seeking osteopathic care. Little is currently known about how managing patients' expectations in PR-LP has beneficial impacts. However, in LBP in the general population, recent work has established that patients' expectations of physiotherapy are central to good management. For example, before a course of physiotherapy, LBP patients expected exercise-based treatment and body-centred diagnoses (Unsgaard-Tøndel & Söderström, 2021). This aligned well to the expectations which were reported by the osteopaths in this study (Study 2), as well as the expectations which comprised the lived experience of the women in study 1. What is interesting, is that the author further reports that, after treatment, components of the therapeutic alliance that were considered decisive and meaningful for the patients included reassurance, active listening with empathy and personally adapted strategies for self-managing pain. This shows that expectations from receiving treatment in complex interventions such as physiotherapy and osteopathy may change as the patient undergoes therapy from more mechanistic and biomedical approaches to those more rooted in the affective and cognitive domains of reassurance. The osteopaths in this study made sense of their therapeutic values and aims in a way that supports this as they attempt to establish a TA which goes beyond biomedical reductionism and facilitates biopsychosocially relevant care.

A qualitative analysis of patients undergoing CAM therapies such as chiropractic, massage, acupuncture, and yoga (Eaves et al., 2015) also explored how expectations were modified in patients presenting with chronic LBP. Authors report that patients undergoing these therapies all experienced changes in their expectations which were associated with greater acceptance of pain and the need for self-care in the management of their condition. Acceptance of pain and related psychological distress have been shown to be associated with greater contact with the present moment, which is linked to reduced catastrophising, and increased pro-active health behaviours (Vowles et al., 2007). That the osteopaths in this study (Study 2) were attuned to facilitating these changes in their patients provides new understandings of how osteopaths in the UK are focussed therapeutically within the management of PR-LP. An interesting aspect of this finding however, was that the EC and EXP group seemed more focussed on this than the AC group. The talk generated from the AC group did not focus significantly on managing expectations. The reason for this is not clear as their excerpts seemed connected to biopsychosocial and psychologically informed practice generally but lacked specific detail of managing expectations.

Osteopaths from all groups highlighted that, through what they described as "actively listening" and "taking the time to listen" they felt that they were able to listen to the women in their care and add meaningfully to the therapeutic alliance in a manner which was different to standard medical care,

such as that provided by GPs, midwives and physiotherapists. Within this, much talk was centred around the “reframing of the advice of others” (Theme 3: Code.14). This code illustrated that the osteopaths felt that they were able to, and that it was necessary to, give advice which conflicted with other healthcare providers, friends, and family. This finding was notable as it echoed the lived experience of the women in Study 1 who felt that their osteopaths took the time to listen and provide explanations which were not given by GPs and midwives. Study 1 also found that for women who suffered from PR-LP and were dissatisfied with standard medical care, through the time provided, and empathy shown to them by their osteopaths this dissatisfaction was addressed. Naturally, these findings may suffer from selection bias as women who have had positive experiences with osteopathy may be more likely to participate in interviews about their experience, but these findings do overarchingly correspond to pregnant women’s reasons for seeking CAM (Close et al., 2006). Beyond MSK pain related specifically to pregnancy, preliminary work has shown clinical populations of patients who consult osteopaths find that, through communication and therapeutic interaction, OC reduced pain related fear and anxiety (Westmoreland et al., 2007). However, the reasons for this are not fully understood.

GPs, physiotherapists and midwives are required to provide care which is compassionate and empathic (Crawford et al., 2014), as well as consistent with psychologically informed care (Cameron et al., 2018). This is at odds with the findings of this study (Study 1) where dissatisfaction was reported as commonplace amongst PR-Patients. However, the findings of a small number of self-selecting participants cannot be considered as generalisable to the PR-LP population. What may be relevant however, is the rationale for investigating further how components of the TA in OC inform community healthcare guidelines to better serve this population of patients at a crucial part of their lives.

6.7.4.2 Reframing the Advice of Others

Specific reframing of the advice of others was found across the dataset in all three groups of osteopaths. These findings highlight that women who are cared for by osteopaths regularly receive advice which is at odds with good practice. Considered in context of the other codes in the data set we see how this is situated within several overlapping codes such as Women’s Isolation (Theme 4, Code. 21), Reflective Practice (Theme 4, Code. 17) and Agency (Theme 3, Code. 16). For example, Rolanda considers that a “challenge” to her in PR-LP is to address the notion that women should essentially just endure PR-LP and are hopeless to do anything about it. PR-LP patients in Study 1 reported this as commonplace and this is reflected in evidence which demonstrates dissatisfaction with standard care in PR-LP (Close et al., 2006). Arguably, this perspective seems to indicate that it is something that the osteopaths were regularly doing in their management and may highlight

opportunities for improvement in communication and the provision of pro-active healthcare reassurance and advice in the management of PR-LP.

6.7.4.3 Normalising Pregnancy and PR-LP

One of the main ways which the osteopaths felt that they had to reframe the advice of others was in normalising pregnancy and PR-LP. All three groups affirmed a relationship with this concept to varying degrees. The EC group specifically sought to establish understanding within the women that PR-LP was a normal aspect of pregnancy and did not mean that something was drastically wrong with their patients or their pregnancy. However, the EXP and AC groups sought to normalise both PR-LP and pregnancy itself. The state of being pregnant has, in most westernised societies been ideologically and culturally influenced by the concept of birth medicalisation (Kennedy et al., 2015). This means that the process of pregnancy in the run up to birth itself is typically represented by many medical procedures. As a result of this, the perinatal period is now influenced with many medical processes and interventions such as fetal monitoring, ultrasound, the use of amniocentesis, in addition to weight, and blood sugar, and blood pressure monitoring (Kennedy et al., 2015)

The osteopaths in this study affirmed a relationship with the medicalisation of birth in a generally negative way, which was asserted in the context of women needing to be “empowered” because standard medical care had failed them or as Francis (AC) asserts, led to them being “processed” in ways which implied a lack of compassion.

The osteopaths, therefore, as part of their TA, stressed the normalising of pregnancy and PR-LP as a natural part of pregnancy. In promoting cognitions which attempted to normalise the state of being pregnant, the osteopaths’ intentions seemed to be to reduce the perceived threat of pregnancy and allow women to return to a healthier psychological state. Reducing the threat of painful conditions has been implicated in aiding patients to re-engage in ADLs and return to normal life with increased feelings of self-efficacy and a more internal locus of control which increases coping strategies (Cross, 2006; Leonhardt et al., 2009). Pain-related behaviours in PR-LP may align to similar research which demonstrates that the osteopathic therapeutic alliance may reduce fear in persistent pain (Westmoreland et al., 2007). In consideration of this is Rolanda, who highlights that she attempts, through education, to allow women to contact their “inner voice” and reconcile aspects of their own selves which have been impacted by public and professional discourses on pregnancy and birth leading to poor advice and subsequent negative self-appraisal (Westergren, 2021).

This position aligns with current understandings of changes to the “self” which persistent pain sufferers experience due to accompanying psychological distress (Osborn & Smith, 2006; Sutherland & Morely, 2008). In this way, it could be considered that osteopaths, through patient-centred

education, are acting to facilitate a return to the natural state of the women's "self" and in doing so bring about positive re-engagement with pro-active health behaviours. Whilst this assertion is based on Rolanda's own experience in the context of shared discussion with her colleagues, it is important to realise that if the osteopaths are, in some way accurate, then current praxis within the healthcare landscape should be reviewed. For example, the concept of health locus of control (HLC) has recently been demonstrated to be of significant relevance in the pregnant population (Wallston et al., 1978). HLC is understood to be determined by internal health locus of control (IHLC) as the individual sees their health in relation to their behaviours. An individual with poor IHLC (health control which is subject to external factors) would see their health as under control of chance (CHLC) or under control of powerful others (PHLC) such as a healthcare provider (Mollard, 2015). This is particularly relevant to this study (Study 2) because the osteopaths uniformly reported that the women are influenced negatively by standard medical care. Furthermore, relatively recent evidence states that women's belief about health control (HLC) is predictive of PND and that there is a need for educational interventions which increase IHLC and are therefore protective of PND (Mollard, 2015).

6.7.4.4 Agency

Another code in this theme which related to how the osteopaths believed that their TA strengthened the coping strategies and resolve of the women was Agency. This was not prevalent in the EC group but was discussed by both the EXP and AC groups. Agency is the capacity of individuals to have the power and resources to fulfil their potential and to act accordingly in response to specific situations or problems encountered (Bandura, 2006). This may be shown in patients suffering from persistent pain which impacts agency, thus affecting their view of the future in a pessimistic manner which then leads to an impaired ability to be resilient to depressive cognitions (Morley et al., 2008). The relevance to the patient's recovery when psychological distress such as this occurs is meaningful in that they engage less in proactive health behaviours which might lead to recovery (Pincus et al., 2002). The osteopaths in these more experienced groups named the phenomenon of agency specifically and discussed how they facilitated, via education, a return to normal living and re-engagement with normal pain free living. The osteopaths again linked this to re-engagement with their patients' self by using encouragement and education to reduce fear and improve negative appraisals. This was principally done via encouraging the women that their bodies were strong and able to carry on with normal activity. However, the EXP group also encouraged the women to explore seeking help from outside parties; for example, by accessing resources such as web fora and specialist interest groups as well as enlisting the role of the partner. The osteopaths described how they would advise the women to bring their partners or family members along to treatment and show them osteopathic techniques which could be applied to the women to alleviate pain in between treatments and as the pregnancy

progressed. Little is understood around this novel facet of pain management. However, a number of potential positive impacts could reasonably stem from during pregnancy as companionship in labour and delivery are associated with psychological benefits and labour outcomes. (Langer et al., 1998). In addition to this, encouraging collaborative approaches at home could theoretically strengthen engagement with the father which may lead to better emotional support for the women who are receiving this guidance. This may be of relevance to the finding from Study 1 where women reported experiencing guilt and negative self-appraisals such as “bad mum” and “bad spouse”.

6.7.4.5 Modify Activity

The EXP osteopaths also provided education which was intended to alleviate the suffering associated with PR-LP by addressing the issue of women having been told regularly to “put up with it” (Rolanda) The tendency to modify rather than stop daily activity was established amongst only the EXP and was coded as Modify activity (Theme 3, Code 16). The osteopaths in this group provided encouragement to continue to engage with activities where possible in a modified way which would allow for continued health benefits. This was framed within the context that the activities were not dangerous for the women to perform and would still allow for the development of a healthy pregnancy. This tendency promoted evidence-informed guidelines on graded return to activity and exercise in LBP in the general population and was consistent with evidence which states that exercise during pregnancy provides psychological and physical health benefits as well as leading to better birth outcomes (Price et al., 2012).

6.7.5 Theme 4 Patients’ Perspectives

This theme centred around the osteopaths’ attempts to understand the women’s perspectives of how they experienced PR-LP. The osteopaths spent time discussing how they reflected on a range of areas related to their own experiences both of pregnancy itself (where appropriate) and how they situated themselves within their patients’ lived experience. All three groups of osteopaths attempted to relate to their patients’ narrative to varying degrees to better establish a TA which was meaningful and helpful in reducing the impact of PR-LP.

6.7.5.1 Reflective Practice

Understanding how individual patient narratives inform medical practices has recently gained attention as a facet of clinical consideration which builds on the biomedical model. Similar to PCC this concept of narrative-based medicine (NBM) has been thought to underpin individualistic approaches to patient care as it recognises the importance of patients’ own experience as they face disease (Zaharias, 2018). The concept of NBM considers how the patient brings experience and cognitions which are specific to them, whereas the caregiver brings their own understanding of what is occurring

in the patient's life and how this may inform diagnosis and management. The osteopaths in this study highlighted a person-specific approach which was imbued with both the narrative that their patients brought to therapy and their own understandings of PR-LP from a theoretical and, sometimes, first hand perspective.

The osteopaths reflected on how their patients' narratives may influence the experience of pain and disability in PR-LP (Code 18. Reflective practice). They considered this from a range of perspectives. The EC group engaged, for example in how the concept of preconceived ideas regarding pain and disability may affect the women and contribute to their vulnerability during PR-LP. This coincides with the concept of "pain memories". Pain memories are a construct which are thought to affect distinctly human cognitions and are thoughts which can arise both from experience or imagined aspects of painful or disabling consequences that arise from threat (Gifford, 1998; Reed et al., 2022). This is particularly important to the women's experience in the context of receiving advice which was inaccurate from healthcare providers (as the osteopaths saw it) because pain-related anxiety and fear may further exacerbate illness behaviour and the transition to persistent pain and disability (Vowles et al., 2007). The osteopaths also situated themselves in the experience of their patients by considering how the experience of PR-LP may become distressing when they are half-way through their pregnancy and lack the emotional support and understanding which will allow them to cope. This is illustrated by Jean (EXP) who discusses PR-LP patients catastrophising about their pain, which is prompted by experiences of friends and colleagues suffering musculoskeletal pain.

The osteopaths aligned this consideration of patients' narratives within several concepts from the dataset which overlap across themes. Specifically, the osteopaths highlighted their tendency to treat each woman as an individual and "tailoring" their therapy to the individual in a holistic manner (see Theme 5: Perception of Osteopathic Uniqueness, Code. 25). The osteopaths also felt that their therapeutic alliance was characterised by taking the time (See Theme 2: Time and Trust, Code 6) to listen and understand the stories of the patients (See Theme 3: Managing expectations, Code 11 and Offering Explanations, Code. 14). This application of reflecting on the women's narrative was also considered by the osteopaths to allow them to consider how the women may be affected by emotions surrounding the experience of PR-LP (see Theme 4. Emotions, Code. 23). As discussed previously, the osteopaths considered that their ability to therapeutically apply concepts which were relevant to the inter-relatedness of the women's mind, body and spirit (the osteopathic triad, See Chapter 3, Section 6) may be relevant here in how physical, psychological and emotional interactions characterise the lived experience of PR-LP (Zegarra-Parodi et al, 2019). From the findings of this dataset, this has specific importance, considering a tendency for pregnant women to report dissatisfaction with standard care whereby pregnant women did not feel listened to or have their needs for PCC -based

approaches and appropriate duration of care addressed (Close et al., 2006; Novic, 2009). The nature of how the osteopaths were able to consider these facets of their patients' experience was rooted in what they perceived as their ability to engage in reflective practice. This was identified by the Code 18: Reflective Practice and was closely linked to how the osteopaths applied therapeutic strategies to their patients and set the environment for what they perceived to be effective clinical management.

The way in which the osteopaths engaged in reflective practice is interesting in how this facet of the TA was established by the different groups. From the data, the EC group appeared to consider this significant and discussed the nature of how reflection may govern action and appropriate care in the management of PR-LP. They seemed to be aware of the prominence of, and need for, reflective practice in clinical care.

6.7.5.2 Practitioner limitations

The EC group also seemed to be more critical of osteopathy as a profession as well as their own limitations. Limitations, in this case centred on their ability to advise on pregnancy and birthing as well as in one isolated incident (Paul) of the limitations of the male practitioner in treating a pregnant patient. By contrast, the dialogue of the EXP group did not consider much in the way of the limitations of osteopathy in the management of PR-LP, rather a significant amount of talk focussed on how this form of therapy was inherently superior to standard medical care. The nature of the personal reflections which were drawn upon in this group came significantly from the experience of the practitioners' own previous pregnancies (e.g. Sunny, Rolanda and Linda). This is perhaps surprising as the more experienced osteopaths appeared less critical in the general sense. This is somewhat converse to what could be expected when considering that reflexivity is thought to occur with experience as a cognitive foundation to the transition from technical rationality to professional artistry (Schon, 2017). However, this may reflect changes in osteopathic training whereby less prominence, both in educational establishments and clinical practice was given to reflexivity in clinical care. This is evidenced by a more recent focus in how osteopaths are trained from a reflective perspective (Thomson et al., 2014). Interestingly, relatively recent work highlights that a proportion of osteopathic practitioners in the UK report (covertly) eschewing current evidence in favour of traditional "osteopathic principles", which can within the profession of osteopathy sometimes be seen to be at odds with evidence-informed care (Figg-Latham & Rajendran, 2017). The AC group perhaps unsurprisingly discussed reflective practice in terms of teaching practice when they discussed it in frank terms (Kelly). However, the excerpts of the group did appear more nuanced and detailed with regard to psychologically informed practice in that they named and discussed in-depth strategies for navigating specific illness behaviours such as catastrophising.

6.7.5.3 Women's isolation

The findings revealed that osteopaths from all three groups had, through their clinical interaction, realised that women consistently felt isolated during pregnancy and when suffering PR-LP (Code 21. Women's Isolation).

This tendency towards feeling isolated appeared to be complex and multifactorial. Osteopaths also identified that the feelings of isolation reported by the PR-LP patients were involved in how they saw themselves and what expectations they had of themselves as women and mothers-to-be. PR-LP patients also reportedly received a wide range of messages from healthcare providers and members of their peer group that could be misconstrued. For example, Rolanda's implies (latently) that women could feel isolated and confused by "messages that they were given" which dis-empowered them from feeling that they could cope.

The impact of isolation and challenges to the women's role during PR-LP could be damaging to women's overall psychological health (Setse, 2009). As PR-LP represents a situation when there is an increased vulnerability towards mental health and anxiety, then this could be related to poor health outcomes for women with PR-LP, given the known association between anxiety, depression and poorer pain management (Olsson & Nilsson-Wikmar, 2004). Mental health problems such as anxiety and depression have further been implicated in medical problems such as pre-eclampsia and perinatal comorbidity (Bayrampour et al., 2015). When identifying this vulnerability, the osteopaths used positive promotion of pro-active health behaviours based on cognitive reassurance in the form of strategies which reaffirmed that PR-LP was treatable. The osteopaths also directed women to online support groups and fora where they could engage with other pregnant women who were suffering similarly. These findings align interestingly with the results of Study 1 where the PR-LP experience was characterised by feelings of being a "bad mum" or "bad spouse" as well as "comparing this self to others" which was reported to exacerbate overall psychological distress. Study 1 also highlighted that women found the experience of receiving osteopathic care to be reassuring and ameliorative of psychological distress as the ability to cope was strengthened by the therapeutic interaction in OC.

6.7.5.4 Emotions

In further consideration of psychological distress, the osteopaths tried to reflect on and identify specific cognitions or feelings that the women were experiencing (Emotions Code.27). All three groups of osteopaths did this to varying degrees of complexity. For example, the EC group reflected on their patients' immediate concerns regarding the pregnancy and health of the baby. This was in addition to how their patients may frame the significance of PR-LP in relation to shared and reported experiences of parents and family members PR-LP. The EXP group were more focussed in terms of the emotional impact of PR-LP on occupational stress. The AC group, however, considered this in more detail and

from more abstract perspectives, such as how therapeutic strategies could positively benefit women at the inherently more vulnerable and heightened emotional state that pregnancy represented. Consideration of the emotional impact of pain is relevant in its management as illness perceptions, including how the sensitivity of a patient's emotional state is related to increased anxiety and depression, and which could lead to more pain and further disability (Costa et al., 2016). Of specific relevance to PR-LP, poorly regulated emotions are linked to increases in hair cortisol analysis samples which indicates higher levels of psychological stress (Penner & Rutherford, 2022). The osteopaths in this study prioritised and reaffirmed an awareness of how emotions may affect their patients' experience. As a result of this, they reported that their TA was characterised by an intention towards augmenting the emotional responses of PR-LP. This understanding provides a further nuance as to how TA in OC was established in the management of PR-LP.

6.7.6 Theme 5: Osteopathic Identity

The osteopaths frequently asserted that therapeutic touch was a defining aspect of their therapeutic alliance. Throughout the dataset this was championed as an “ideal” way of interacting with women suffering from PR-LP.

6.7.6.1 Primacy of Touch

Frequent references to the benefit of the “hands-on” approach, that is characterised by osteopathic care, were made in the context of this being idealised when compared to therapy which lacked this. This was established within the EXP group most readily. For example, Judith's and Linda's excerpts regarding touch (in 6.6.5.1) demonstrate their perception that, in comparison to physiotherapy for PR-LP, their approach offers more than a “list of exercises”. Whilst it is true that physiotherapy, by comparison to osteopathy, has essentially reduced or removed the utilisation of manual therapy on the NHS in the UK (Zusman, 2013) this position requires a critical perspective as to the usefulness of therapeutic touch in general. It is the case that manual therapy, such as that offered by osteopaths, has been considered inconsistent with the biopsychosocial model over the last few decades, principally because evidence in support of lifestyle and psychological factors has been demonstrated to be the greatest impediment to recovery (Geri et al., 2019). In this context, touch based therapies have been subjected to criticism due to a lack of specificity and construct validity of their purported mechanisms of action. For example, traditional models of osteopathic palpation are based on the detection of asymmetry of body regions or properties of tissue such as spinal stiffness (Bergna et al., 2022). These traditional perspectives have been demonstrated to have not best quality evidence in support of them (Lederman, 2011) and indeed, in some examples, be incongruous with biological feasibility (Guillaud et al., 2016)

What is interesting about the data in this study is that the osteopaths, in each group, do not tend to concern themselves with simple biomechanical concepts: rather, there is significant overlap with how touch, in the management of PR-LP is considered to affect the communicative aspects of therapy in terms of cognitive (See Barry PG) and affective reassurance (Pincus et al., 2013) (see Sunny PG). This is particularly interesting, considering recent evidence which reviews the data on therapeutic touch for a neurophysiological and psychological perspective (McPalin et al., 2022).

Despite the popularity of teaching the mechanical specificity of manual therapy in osteopathic training (Bergna et al., 2022), the osteopaths in this study assert that their touch consolidates communication, reassurance, and trust and subsequently these aspects of therapy are improved. This finding aligns with evidence which highlights the role of touch beyond simple neurophysiological processing. For example, several authors highlight that touch can both communicate and elicit emotions (Hertenstein et al., 2009). Additionally, Harris et al, (2019) assert that the context of where touch occurs can facilitate recognition of emotions between the individual being touched and the person who is touching them (Harris et al., 2019). In the case of the osteopaths in this study, a range of complex aspects of communication and therapeutic ritual may be accompanying the touch, which may act as a vehicle for positive changes relevant to reductions pain. This form of ‘affective touch is considered to work via the pain-reducing dopamine and opioid pathways in the brain and spinal cord’ (Ellingsen et al., 2016).

Of further relevance to the osteopaths’ therapeutic alliance is the concept of “somatoconceptual” touch (Geri et al., 2019). This type of touch, characterised by “affective” communication is considered to change bodily perception within patients which can lead to reductions in the intensity of the pain perceived (Pavani & Galfano, 2015). Furthermore, touch which occurs within a positive setting is hypothesised to promote positive emotions and contribute to the establishment of a psychological (empathic) bond between the person being touched and the person who touches them (Grandi, 2016).

This aspect of OC may relate further to data on interoception in persistent pain (Cerritelli et al., 2020) which further underscores the possibility that touch, in the therapeutic context of OC is reducing problems of sensory processing and tactile vulnerability which is seen in pregnancy (Palson et al., 2015). These points are particularly interesting in light of how the osteopaths in the EXP and AC groups assert that osteopathic care, including touch, empowers (Theme 2, Code 9) women with PR-LP and increases Agency (Theme 3, Code 16) This aspect of the osteopathic therapeutic alliance aligns with traditional principles from the perspective of the mind-body-spirit triad but has previously not been examined significantly in empirical studies which explore the effect of osteopathic care on specific conditions. However, non-specific therapeutic touch (generalised light touch) has demonstrated

positive outcomes in a range of conditions such as PTSD (Wahbeh, 2014), total knee replacement (Liu et al., 2021) and crying in unsettled infants (Carnes et al., 2018). It would seem rational therefore to investigate the intentioned and specific touch which is being described in this study with a view to its impact on persistent pain.

Interesting differences between the relationship with touch and the therapeutic alliance between groups were apparent from the data. For example, the EC group considered touch within the remit of a broader package of care which included advice and exercise prescription. The AC group aligned their therapeutic alliance to more abstract concepts of touch and how this may impact neurological concepts such as interoception, specific to the reduction of pain. However, the EC group who, informed by their clinical experience contacted patients at the “coal face” of their profession were more detailed in how touch interacted with concepts such as reassurance, agency and empowerment. This may reflect the different nature of the individuals’ day to day work as well as changes in focus of undergraduate education, depending on when the osteopaths had trained. This is evident in the increased importance of how the evidence base on lifestyle and social factors is becoming progressively more considered by the manual therapy sector (Fryer, 2017).

6.7.6.2 Perceived dialogue with body tissues

This difference between the EC group and the other groups was further evident in how they considered their therapeutic alliance to be rooted in a perception of dialogue with the bodily tissues underneath their hands (Code .25 Perceived Dialogue with Body Tissues). This concept manifested in the osteopaths asserting that they were able to feel psychological stress by the quality of the women’s tissues (Sunny) as well as a perceived interaction between communication and contemporaneous touch which led to an “unlocking” of layers of body tissue as the patient relaxed (Joe). The AC group also affirmed a relationship with the empowering nature of the patient feeling relaxation alongside the communication that the osteopath made as this “release” was both perceived by them and communicated to the patient (Jeffrey). Given that only the latter two, more experienced, groups engage with these concepts could indicate that osteopaths develop, over time, complex understandings of how subtle perceived aspects of touch are working to both inform their clinical action and the impact of their treatment on patients. Little is understood about these phenomena in human interaction; however, these findings indicate that osteopathic care in PR-LP represents a complex intervention, which is characterised by tactile interactions seemingly tailored to the individual. This may align well with the data regarding what represents PCC in clinical care generally (Thomson et al., 2014). However, what is less understood is if this relationship could be impacting patients negatively. For therapeutic efficacy to be present, the possibility of “nocebic” or harmful

effects of therapeutic touch cannot be discounted. The osteopaths consistently reported positive impacts and effects with how they used the combination of touch and reassurance and are therefore very likely to be making assertions with confirmation bias. In the case whereby patients had a negative experience osteopaths are less likely to be aware of this due to women not returning for further treatment. Therefore, in order to understand the positive aspects of this complex intervention further research is required to highlight the factors at play within the TA of OC and PR-LP. Additionally, potential negative effects of poor communication or touch and communication that was experienced negatively should be explored.. This is specifically relevant for this study as PR-LP patients who experience psychological distress during pregnancy are likely to have poorer outcomes post-partum (Horwitz et al., 2009)

6.7.6.3 Mystical connections to healing

The osteopaths in the AC group also referred to, at times, mystical connections which played a role in their therapeutic alliance. This was characterised by feelings of being moved to treat areas seemingly unconnected to the presenting complaint. Hannah affirms connections with the “magical” and a “rhythm” and “flow” which she can sometimes perceive to be happening during the times that she is working. She describes this within a conceptual basis which is unclear and inconsistent with evidence-based medicine. Jeffrey also makes reference to certain “rhythms” and “flows” which he describes within the biodynamic paradigm. The concept of “flow” has been explored in both athletic endeavour and education. Broadly this theory is encapsulated by situations whereby practitioners or exponents of specific activity experience situations where goals are clear, feedback is immediate, skills match challenges, concentration is deep, problems are forgotten, control is possible, self-consciousness disappears, sense of time is altered, and experience becomes autotelic (Csikszentmihalyi, 1997).

This is interesting as Kelly (AC) makes reference to biodynamic approaches in the establishment of her TA). Biodynamism is a concept which is within the theory of osteopathy in the Cranial field (OCF) (Monro, 2017). OCF is a sub-set of osteopathy which holds that osteopaths can train their palpation to detect, by laying their hands on the patient’s head, extremely small movement (less than 1mm) between the sutures of the many bones which make up the human skull. Aberrations of these movements are then considered to be impediments to the appropriate flow of cerebrospinal fluid which contains and nourishes the nervous system. The concept has been met with much contention and derision as to its mechanism of action within osteopathy and divides the profession significantly. Some favourable clinical outcomes are suggested by selected controlled trials (Gesslbauer et al., 2018). However, in light of evidence that indicates extremely poor inter-examiner reliability in the context of what is understood about intentioned touch, biological feasibility of the mechanism of

action and diagnostic accuracy is low (Guillaud et al., 2016). Furthermore, Biodynamic OCF advances this theory to suggest that specific emotional connections and diagnoses of patients' lived experience which are related to a belief in the spiritual realm (Shea, 2007) are perceptible and modifiable by contacting the bones of the skull and healing with therapeutic intention.

Clearly, these concepts are at odds with evidence-based medicine from a theoretical perspective. However, from practice-based evidence, OCF and similar approaches which are underpinned by biodynamic theory have shown positive clinical outcomes selected disorders (Hazelbaker, 2020). These results are not fully understood in the light of proposed mechanisms of action of OC and it is surprising to see that the AC group, who are involved with the university education of prospective practitioners, establish the TA from these perspectives. However, these concepts are regularly discussed within the osteopathic profession and given the individualistic way a given practitioner applies OC, this allows for a significant eclecticism of style which prevails outside of professional practice allied to medicine which generally inhabits hierarchical structures of public healthcare such as the NHS. It could therefore be the case that, much like OPFs, the practitioners are attempting to articulate that which is intuitive in the context of applying theory and communicative, intentioned touch in a manner which can be understood; at least to them. For example, clear similarities are present here between the harmony of mind-body-spirit as a therapeutic ideal which aligns with traditional osteopathic thinking (Zegarra-Parodi et al., 2019) and as such may influencing the conceptualisation of intentioned or communicative touch in the AC group.

6.7.6.4 Perception of osteopathic uniqueness

Throughout the interview, the osteopaths asserted numerous times that OC within the management of PR-LP was characterised by a "uniqueness" which defined their interactions and clinical care. This was often discussed broadly in terms of what constituted the "osteopathic approach" and occurred in the concept of the "osteopathic triad" (See Chapter 3, Section 6) or the conceptual interplay of the patient's "mind-body-spirit". This concept is known to be a historical foundation of osteopathic clinical reasoning which (within OC) highlights that the osteopathic perspective considers that effective management of disease states relies on considerations of these components (Zegarra-Parodi et al., 2019). Interesting parallels to the BPS model (Engel, 1981) and more recently, embodied care (Grace, 2003) arise from these assertions which showed the concept of mind-body-spirit to interact with key aspects of several codes such as (Regional Interdependence (Theme 1, Code1), Physical Outcomes as Context (Theme 1, Code 2), Communication and Reassurance (Theme 2, Code 5), Time and Trust (Theme 2, Code 6) Empowerment (Theme 2, Code 6), Language and Meaning (Theme 2, Code 7), Reframing the Advice of Others (Theme3, Code 13) and Agency (Theme3, Code 16). although more

detailed exploration of the relevance this construct to modern clinical practice within OC is warranted (See Chapter 9, Section 4).

6.8 Study 2 Limitations

Limitations within Study 2 could also be present from my position as an osteopath and osteopathic academic. “Pro-osteopathic” bias could have been applied to both my line of interview questioning and data interpretation. Whilst the research framed the research question from an inductive/interpretative perspective the fact remains that the I was an osteopath, interviewing groups of osteopaths. As such the direction and focus of the interview may have been affected by this. For example, several positions taken by the participants which cited osteopathic uniqueness (and tacit superiority) may have been scrutinised more impartially, if the researcher was a non-osteopath.

Similarly to Study 1, Study 2 suffered from given very slow uptake of recruitment and logistical challenges to data collection such as researcher time balanced against academic workload. This made it very difficult to coordinate patient and participant involvement and engagement (PPIE) (Mathieson et al., 2025) which could have positively impacted recruitment and study design. Principally this may have mitigated pro-osteopathic bias by adding an additionally” layer” of confirmatory quality to the findings (See also Section 5.7). What was done to attempt to allay this was the use of peer debriefing and Supervisory Team oversight of study and interview design (See also Section Section 2.2). This study also used retrospective reports of experience which may have impacted the accuracy of the reported experience (Talari & Goyal, 2020). Additionally, findings from the peer review literature indicate that the UK osteopathic profession is divided on the applicability of research to praxis (Cotton, 2013; Figg-Latham & Ragendran, 2016). This could have meant that the participants were more favouring of research and more willing to discuss the nature of the question at hand that UK osteopaths who were less in favour of the applicability of research to praxis. As such this aspect of the data collection may have impacted the generalisability of the findings in this study.

As this second study used focus groups the nature of this form of data collection could present some limitations. Specifically, aspects of bias and participants influencing the research via difference in personality (dominance and assertiveness) can lead to skewed results. (Smithson, 2000). Similarly, participant hesitancy may have led to answers which were considered more professionally acceptable and not representative of more accurate personal views. Furthermore, the personality and influence of the researcher and participants may have led the research into potentially partisan directions which negatively impact generalisability and validity (Barbour, 2007).

This second study also used thematic analysis. This method is also inherently subjective (Braun & Clarke, 2016). This subjectivity can lead to potential challenges of generalisability and inconsistent

interpretation. Additionally, the concept of over-interpretation of findings leading to conclusions which are not supported by the data has also been identified and is related to the subjective bias of the researcher (Ahmed et al., 2025). Efforts throughout this project to reduce the impact of these potential limitations via reflexive accounting are detailed in (Chapters 2,4,5,6,7&8).

Of note is that data collection for Study 2 was during the COVID-19 Pandemic. This may have negatively influenced the uptake of participants as most UK osteopaths are self-employed or business owners. Osteopaths at this time may have had atypical and pressing issues due to the impact of the pandemic on the running of their businesses. Furthermore, at this time significant operational strain was placed on both the degree course that I was teaching and the University in general. This made the implementation of PPIE unfeasible at this time. As previously mentioned above (and in Section 5.7), this may have impacted study quality.

Chapter 7. Design of Clinical Toolkit

7.1 Reflective Process Underpinning the Development of the Clinical Toolkit

This Section describes the reflective steps taken to develop the Clinical Toolkit and summarise key aspects of both Study 1's and Study 2's findings.

As discussed, (Chapter 4) From the findings of Study 1 and 2 I developed a clinical toolkit to act as an draft initial pilot which informed osteopathic practice. Clinical toolkits have been used in health and social care as strategies to foster adoption of evidence-based and best practice. Toolkits are a collection of adaptable documents used to inform and facilitate implementation and are understood to increase the use of evidence-based approaches (Thoele et al., 2020). There exists no specific format for the development of these documents and indeed, arguably, given their variable audiences, nor should there. I found this challenging and as such kept a research log of the process by which I could best make the two datasets from different qualitative methodologies used in Study 1 (IPA) and Study 2 (thematic analysis) clear to the participants of Study 3's group semi-structured interview.

My initial consideration was that Study 1 had a far greater quantity of data in it than Study 2. Therefore, I was concerned that the relative "weighting" of Study 2 would obscure any meaningful context of the women with PR-LP's experience that Study 1 had, for the osteopaths to be interviewed. I reflected that, in fact the osteopaths in Study 3 were largely concerned with the findings of Study 2, but In the *context* of Study 1. This made sense to me because Study 1's findings informed Study 2, so a logical progression was evident. To remedy problems that I anticipated with confusion during the upcoming interview however, I prepared a short presentation (Appendix 20) of how the project was structured up until that point. This was to provide a clear overview of the nature and purpose of the research question which set the scene for the focus group of participating osteopaths in Study 3.

My next concern was what format that the clinical toolkit should take. In order to obtain some thoughts and ideas on this I reviewed a range of literature (Fig 7.2) on clinical toolkits. During this process it was hard to find an appropriate "template" which could be adapted. This was often due to clinical toolkits taking a varied of forms such as quantitative scoring of clinical outcomes (Brennen et al., 2019) and online patient-education systems (Goff et al., 2023). Some of the available toolkit templates also relied on mixed methods findings from their underpinning studies. I needed something that was clear for the participants in Study 3. For this reason, I chose to adapt the format of the Osteopathic Practice Standards (OPS) (GOsC 2012). The OPS uses four domains to set out key areas of professional standards for osteopaths, which have sub-components which make up the over-arching domain or theme in question (much like the clinical toolkit from this study). In adopting a "mini-OPS" style framework for the toolkit I would be able to present clinical guidance in a manner which was

clear, and crucially, familiar to the participants in Study 3. Naturally, I had to review this carefully during construction of the toolkit to ensure that there was not repetition of specific OPS standards with this toolkit which was focussed specifically on OC in PR-LP.

I then began a reflexive iterative process of carefully reading and re-reading the findings from Studies 1 and 2 and making notes in the margins of printed draft copies of these chapters. Specifically, I attempted to capture the essence of what the findings of these studies represented in terms of applicability to osteopathic practice and what these findings may add to the current status quo of OC in PR-LP. I then named each of the five domains of the toolkit in accordance with its theme and aligned the findings in terms of Study 1 and Study 2 to sub-domains or “components” which each of the five domains had been derived from these studies’ findings. In this, I included overlapping themes and codes which represented the nuanced nature of how the TA was established in OC in the management of PR-LP. Furthermore, I reflected on specific notable examples which represented or challenged currently held understandings of both TA and OC in the management of PR-LP. This also informed the construction of specific questions and code attribution (Section 7.3).

This exercise was reflective and as such drew on my own experiences as an osteopath of approaching 20 years. It was also informed by my experiences of being a Senior lecturer, Programme Manager, External Examiner and Guest Lecturer within osteopathy and related fields. As such, the personal attribution of the codes to the themes from the research that I had conducted were subject to personal biases (Please see Section 9.6: Limitations). However, at each stage I attempted to remain reflective and made notes in my research log. At the start of the clinical toolkit development process, I met with my Supervisory team to discuss the challenges. I then proceeded along the process (Fig 7.1) and submitted the completed draft toolkit for approval prior to implementing this in Study 3.

Figure 7.1: Flow Diagram of Clinical Toolkit Development Process

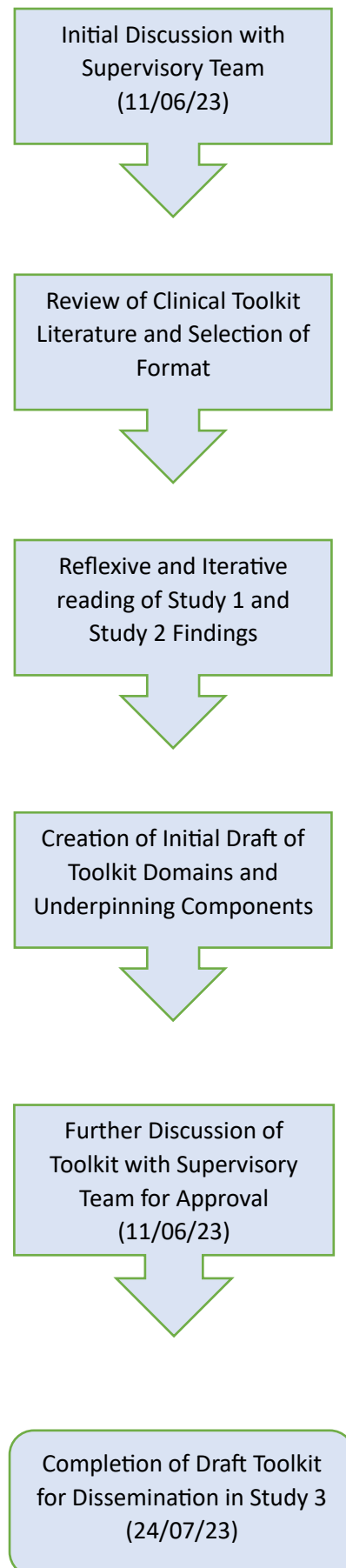


Figure 7.2 Clinical Toolkit Literature Which was Reviewed as Part of Reflective Process

Brennen, R., Sherburn, M., & Rosamilia, A. (2019). Development, implementation and evaluation of an advanced practice in continence and women's health physiotherapy model of care. *Australian & New Zealand Journal of Obstetrics & Gynaecology*, 59(3), 450–456

Cleary, M., & Walter, G. (2010). Teaching and learning "on the run": ready-to-use toolkits in busy clinical settings. *The Journal of Continuing Education in Nursing*, 41(6), 244–245

Goff, A. J., De Oliveira Silva, D., Ezzat, A. M., Crossley, K. M., Pazzinatto, M. F., & Barton, C. J. (2023). Co-design of the web-based 'My Knee' education and self-management toolkit for people with knee osteoarthritis. *Digital Health*, 9

Hernández-Padilla, J. M., Cortés-Rodríguez, A. E., Granero-Molina, J., Fernández-Sola, C., Correa-Casado, M., Fernández-Medina, I. M., & López-Rodríguez, M. M. (2019). Design and Psychometric Evaluation of the "Clinical Communication Self-Efficacy Toolkit." *International Journal of Environmental Research and Public Health*, 16(22), 4534-.

Richards, C. L., Malouin, F., Nadeau, S., Fung, J., D'Amours, L., Perez, C., & Durand, A. (2019). Development, Implementation, and Clinician Adherence to a Standardized Assessment Toolkit for Sensorimotor Rehabilitation after Stroke. *Physiotherapy Canada*, 71(1), 43–55

Stevens, K. E., & Duffy, E. A. (2017). A Toolkit for Nursing Clinical Instructors. *Teaching and Learning in Nursing*, 12(2), 170–172

Thoele, K., Ferren, M., Moffat, L., Keen, A., & Newhouse, R. (2020). Development and use of a toolkit to facilitate implementation of an evidence-based intervention: a descriptive case study. *Implementation Science Communications*, 1(1), 86–86.

Yaniv, Z., Banovac, F., Cheng, P., Wilson, E., Popa, T., Lindisch, D., Campos-Nanez, E., Abeledo, H., Watson, V., & Cleary, K. (2010). Needle-Based Interventions With the Image-Guided Surgery Toolkit (IGSTK): From Phantoms to Clinical Trials. *IEEE Transactions on Biomedical Engineering*, 57(4), 922–933.

7.2 Aligning Codes with Themes

Below are details of the themes of the clinical toolkit with codes derived (in italics) from Study 2 and attributed to the specific components of the clinical toolkit.

7.2.1 Theme 1: Autonomous Practice

Based on the findings of this research, osteopaths made sense of their initial establishment of the TA by considering the concept of how structure governed function in a regionally interdependent way. The osteopaths then used physical outcomes of improvement and relative risk of medical complications to the viability of pregnancy to establish how to treat their patients. The osteopaths applied this reasoning to make decisions regarding the best way to care for their patients in a fluid and individualised manner.

Autonomous Practice (AP)
AP1: Begin management by triaging patient for risks to mother and baby Relevant codes from Study 2: <i>(3) Managing Risk 18) Remaining Reflective (10) Connection to the baby (19) Practitioner Limitations</i>
AP2: Discuss theoretical risks of osteopathic care to pregnancy Relevant codes from Study 2: <i>(3) Managing Risk (5) Communication and Reassurance (12) Managing Expectations (13) Normalising Pregnancy (15) Offering Explanations (18) Reflective Practice (20) Patient's Perspectives</i>
AP3: Identify any fear or worry around PR_LP and explain how structure and function and related techniques may soothe pain Relevant codes from Study 2:

(1) Regional Inter-dependence (2) Physical outcomes as Context (4) Adaptability (5) Communication and Reassurance (12) Managing Expectations (13) Normalising Pregnancy (15) Offering Explanations (18) (20) Patients’ Perspectives

AP4: Be adaptable - consider modifying your assessment and treatment to more general and less specific treatment where appropriate.

Relevant codes from Study 2:

(4) Adaptability (6) Time and Trust (7) Language and meaning (8) Compassion(9) Empowerment (17)Agency 20) Patients’ Perspectives (24) Primacy of Touch (25) Perceived dialogue with body tissues (27)Perception of Osteopathic Uniqueness

AP5: Communicate positive changes that occur in treatment and at successive visits

Relevant codes from Study 2

(1) Regional Inter-dependence (5) Communication and Reassurance (12 Managing Expectations (20) Patients’ Perspectives (24) Primacy of Touch (27) Perception of Osteopathic Uniqueness

7.2.2 Theme 2: Communication and Reassurance

Based on the findings of this research the osteopaths prioritised communication and reassurance from both affective (soothing) and cognitive (practical) perspectives. They combined these forms of reassurance together with understandings of how the use of language and meaning impacted their patients. A key feature here was the length of treatment time which osteopaths felt gave them the freedom to develop trust and empower their patients.

Communication and Reassurance (CR)

CR1: Give affective (comforting) and cognitive (educational) reassurance to increase your patient’s ability to cope.

Relevant codes from Study 2:

(5) Communication and Reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (15) Offering Explanations (9) Empowerment (17) Agency (27) Perception of Osteopathic Uniqueness

CR2: Take time to build trust, demonstrate empathy, compassion and understand the patient's boundaries.

Relevant codes from Study 2:

(5) Communication and Reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (15) Offering Explanations (9) Empowerment (17) Agency (20) Patients' Perspectives (27) Perception of Osteopathic Uniqueness

CR3: Avoid threatening language which stresses concepts such as "alignment" and "positional lesions".

Relevant codes from Study 2:

(1) Regional Interdependence (2) Physical outcomes as Context (5) Communication and Reassurance (8) Compassion (9) Empowerment (20) Patients' Perspectives (23) Emotions

CR4: Aim to establish the patient's understanding of PR-LP and how osteopathic care can impact this.

Relevant codes from Study 2:

(1) Regional Inter-dependence (2) Physical outcomes as Context (5) Communication and Reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (15) Offering

Explanations (9) Empowerment (17) Agency (20) Patients' Perspectives (27) Perception of Osteopathic Uniqueness

CR5: Strengthen your patient's sense of agency to re-empower them in their roles (mother, spouse, caregiver) for pre and post-partum.

Relevant codes from Study 2:

(1) Regional Inter-dependence (2) Physical outcomes as Context (5) Communication and Reassurance(8) Compassion (6) Time and Trust (7) Language and Meaning (8) Compassion (15) Offering Explanations (9) Empowerment (17) Agency (20) Patients' Perspectives (Emotions)(27) Perception of Osteopathic Uniqueness

CR6: Be sensitive to how patients can feel isolated by PR-LP, develop strategies which can help with this feeling.

Relevant codes from Study 2:

(5) Communication and Reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (15) Offering Explanations (9) Empowerment (17) Agency (20) Patients' Perspectives (21 Women's isolation (22) Women's Role (23) Emotions (27) Perception of Osteopathic Uniqueness

7.2.3 Theme 3: The Osteopath as Educator

Based on the findings of this research the osteopaths highlighted that a key feature of their TA was to manage expectations of PR-LP. This was often done via offering explanations and reframing or contesting the advice of other healthcare practitioners such as GPs, physiotherapists and midwives. The osteopaths felt that by normalising PR-LP and pregnancy that they were able to encourage women

to modify, rather than stop their activity and therefore increase their agency, meaning that they were less afraid of the future and could live with confidence despite their PR-LP.

Osteopath as Educator (OE)
OE1: Prioritise understanding and managing patient expectations. Relevant codes from Study 2: <i>(1) Regional Interdependence (2) Physical outcomes as Context (5) Communication and reassurance Time and Trust (7) Language and Meaning (8) Compassion (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (21 Women's isolation (22) Women's Role (23) Emotions (27) Perception of Osteopathic Uniqueness</i>
OE1: Prioritise understanding and managing patient expectations. Relevant codes from Study 2: <i>(2) Physical outcomes as Context (5) Communication and reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (21 Women's isolation (22) Women's Role (23) Emotions (27) Perception of Osteopathic Uniqueness</i>
OE3: Normalise pregnancy and PR-LP. Relevant codes from Study 2: <i>(5) Communication and reassurance Time and Trust (7) Language and Meaning (8) Compassion (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (23) Emotions (27) Perception of Osteopathic Uniqueness</i>

OE4: Assess your patient's understanding of the advice of other healthcare providers (OHPs) and address in clearly and simply anything that is not understood.

Relevant codes from Study 2:

(5) Communication and reassurance Time and Trust (7) Language and Meaning (8) Compassion (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (23) Emotions (27) Perception of Osteopathic Uniqueness

OE5: Modify recreational activity and ADLS rather than stop activities.

Relevant codes from Study 2:

(1) Regional Interdependence (2) Physical outcomes as Context (5) Communication and reassurance Time and Trust (7) (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (23)

7.2.4 Theme 4: Patients' Perspectives

Based on the findings of this research, the osteopaths considered that situating themselves within the patient's perspective and reflecting on how they experienced PR-LP was a key aspect of management. The osteopaths felt that the underlying components of this experience were characteristic of emotional and psychological distress.

Patients' Perspectives (PP)

PP1: Reflect on the limitations and capabilities of osteopathic care in PR-LP,

Relevant codes from Study 2:

(3) Managing Risk (18) Reflective Practice (19) Practitioner Limitations

PP2: Consider the patients lived experience of PR-LP and how this impacts their thoughts about their health, their pregnancy and coping with day to day life.

Relevant codes from Study 2:

(16) Modify Activity (9) Empowerment (16) Modify Activity (17) Agency (18) Reflective Practice (20) Patients' Perspectives (21 Women's isolation (22) Women's Role (23) Emotions

PP3: Reflect on how the patient's role and identity as a spouse, parent or woman in general may be impacted by PR-LP

Relevant codes from Study 2:

(9) Empowerment (16) Modify Activity (17) Agency (18) Reflective Practice (20) Patient's Perspectives (21 Women's isolation (22) Women's Role (23) Emotions

PP4: Reflect on how isolation could be a feature of PR-LP and what strategies may be employed to assist with coping.

Relevant codes from Study 2:

(5) Communication and Reassurance (9) Empowerment (16) Modify Activity (17) Agency (18) Reflective Practice (20) Patients' Perspectives (21 Women's isolation (22) Women's Role (23) Emotions

PP5: Be open to discussing the emotional impact of PR-LP and be sensitive to how this guides management.

Relevant codes from Study 2:

(5) Communication and Reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice

of Others (15) Offering Explanations (16) Modify Activity (9) Empowerment (17) Agency (20) Patients' Perspectives (21) Women's isolation (22) Women's Role (23) Emotions (27) Perception of Osteopathic Uniqueness

7.2.5 Theme 5: Osteopathic Identity

Based on the findings of this research, the osteopaths felt that their professional identity as osteopaths added to the therapeutic alliance. Key aspects of the importance of touch and the shared experience of palpation and changes in the tissues were considered to benefit the relationship between the practitioner and patient. The osteopaths also felt that some aspects of this relationship were hard to describe and created an unspoken therapeutic dialogue that was specific to OC.

Osteopathic Identity (OI)
OE1: Prioritise understanding and managing patient expectations. Relevant codes from Study 2: <i>(1) Regional Inter-dependence (2) Physical outcomes as Context (5) Communication and reassurance (6) Time and Trust (7) Language and Meaning (8) Compassion (9) Empowerment (12) Managing Expectations (13) Normalising Pregnancy (14) Reframing the Advice of Others (15) Offering Explanations (16) Modify Activity (17) Agency (18) Reflective Practice (20) Patients' Perspectives (21) Women's isolation (22) Women's Role (23) Emotions (24) Primacy of Touch (25) Perceived Dialogue with Body Tissues (27) Perception of Osteopathic Uniqueness</i>
OI2: Consider how palpation and therapeutic touch may act as a vehicle to deliver and strengthen both affective (comforting) and cognitive (educational) reassurance. Relevant codes from Study 2: <i>(1) Regional Inter-dependence (2) Physical Outcomes as Context (5) Communication and Reassurance (6) Time and Trust (7) language and Meaning (8) Compassion (17) Agency (18)</i>

Reflective Practice (23) Emotions (24) Primacy of Touch (25) Perceived Dialogue with Body Tissues (27) Perception of Osteopathic Uniqueness

OI3: Consider sharing your experience of palpation as tissue changes with the patient, do they perceive this in tandem with you?

Relevant codes from Study 2:

(2) Physical Outcomes as Context (5) Communication and Reassurance (6) Time and Trust (7) language and Meaning (9) Empowerment (17) Agency (18) Reflective Practice (24) Primacy of Touch (25) Perceived Dialogue with Body Tissues (27) Perception of Osteopathic Uniqueness

OI4: Reflect on your therapeutic intention as you palpate and treat your patient's tissues, does this impact therapeutic outcome?

Relevant codes from Study 2:

(2) Physical Outcomes as Context (5) Communication and Reassurance (6) Time and Trust (7) language and Meaning (9) Empowerment (17) Agency (24) Primacy of Touch (23) Emotions (25) Perceived Dialogue with Body Tissues (26) Mystical Connections to Healing (27) Perception of Osteopathic Uniqueness

OI5: Reflect on the broader psychological and physiological changes that may be impacted by osteopathic care.

Relevant codes from Study 2:

(9) Empowerment (Agency) (24) Primacy of Touch (23) Emotions (25) Perceived Dialogue with Body Tissues (26) Mystical Connections to Healing (27) Perception of Osteopathic Uniqueness

7.3 Summary

The clinical toolkit developed from the analysis and findings of Study 1 and Study 2 of this project represents a representation of the TA of OC in the management of PR-LP. This has been synthesised in the context of new understandings of the lived experience of PR-LP which were discovered via the findings and analysis of Study 1 of this project. This clinical toolkit has been constructed as a draft pilot form of information to inform practice, or “best practice” then inform the construction of the semi-structured interview and related discussions with a group of practising UK osteopaths in Study 3 (Chapter 8).

Chapter 8. Study 3

8.1 Introduction

In the previous Chapter, Study 2 explored via thematic analysis (Braun & Clarke, 2006) how osteopaths made sense of and established the TA in their management of PR-LP. The results of this previous study were derived from three semi-structured group interviews of UK osteopaths (n=21) grouped for years of experience and possible specialist or advanced knowledge. The results of Study 2 revealed that UK osteopaths established the TA in OC during the management of PR-LP across five main domains which were thematically characterised as follows: 1. Autonomous Practice, 2. Communication and Reassurance, 3. The Osteopath as Educator, 4. Patients' Perspectives, and 5. Osteopathic Identity. Following the final iterative process of thematic analysis, these five domains were comprised of twenty-five codes which characterised the TA of OC in PR-LP (Fig 6.3). The themes and codes from Study 2 represented a large amount of data and were found to overlap in varied and intricate ways which illustrated the complexity of OC in the management of PR-LP (See Fig 9.1 Study 2: Overlapping Themes).

To explore the validity of this complex dataset and gain understandings of the relevance of Study 1 and Study 2's findings for UK osteopathic practice, a third and final study was conducted. This was initiated by the creation of a clinical toolkit (Appendix 21) which summarised key aspects of the findings of Study 1 and Study 2 and presented as an initial draft pilot which informs practice in the management of PR-LP to a further group of UK osteopaths (n=6). The initial pilot study was considered at this stage as an exploratory exercise as, due to the constraints of the doctoral project it did not concern itself with the practical or economic details that would be required for a more substantial project such as a funded pilot or feasibility study (National Institute for Health and Care Research, 2023). A further semi-structured group interview was held with these participants which explored, through thematic analysis and concordance the feasibility of the findings and what this added to the existing knowledge base. This Chapter discusses the rationale for, and findings of, Study 3.

8.2 Aims

The aims of this third and final study were twofold. Firstly, via a reflexive process this study aimed to develop a Clinical Toolkit (Appendix 21), which informed osteopathic practice, representing key areas of good practice which were developed from the findings of Study 2 (TA of OC in PR-LP). This was informed also by the findings of Study 1 (IPA of lived experience of PR-LP). Secondly, via focus group

research this study aimed to explore the feasibility of the toolkit and its relevance for UK osteopathic practice, training and research.

8.3 Methods

In Study 3, focus group research was utilized to explore the feasibility and development of a clinical toolkit for managing PR-LP among osteopathic practitioners. Data from Study 1 and Study 2 were utilized to draft the Clinical Toolkit (Appendix 21) This aimed to establish areas of key good practice in the osteopathic management of PR-LP and optimize patient care. This study represented the preliminary validation process of the toolkit within osteopathic education and postgraduate training. A total of six UK registered osteopaths with clinical experience in managing PR-LP were recruited via direct email invitations (appendix 1), targeting individuals listed on the General Osteopathic Council website. Additionally, osteopathic practitioners in South West Wales were contacted through the Swansea M.Ost programme and the South Wales Osteopathic Society (SWOS), with permission obtained for this purpose. Participants were invited to an online Zoom focus group via online invitations (Appendix 14). Upon expressing interest, participants were provided with a participant information sheet (Appendix 15) and a consent form highlighting consent to recording by Zoom and Dictaphone (Appendix 16). The data collected from this study were transcribed and thematically analysed following the process for focus groups outlined by Braun and Clarke (2006). This analysis aimed to establish themes and relationships relevant to the future development of clinical guidance in the management of PR-LP.

8.3.1 Development of Clinical Toolkit

The Clinical Toolkit (Appendix 21) was developed from the themes of Study 1 and Study 2. A reflexive approach was taken which considered these findings, taking into account the related peer reviewed literature and the researcher's own reflexivity, which was informed by their experiences as a practising osteopath, Senior lecturer (previously) and current clinical lecturer on subjects related to pain management, including pregnancy. Importantly, the analysis of the data from Study 2 (Chapter 6) and the discussion of these findings (Chapter 7) were based on the inductive reflexive approach to thematic analysis (Braun & Clarke, 2006) (see Chapter 3: Methodology and Methods for a review of this). This meant that the themes were not considered to "emerge" from the data. Rather these themes were constructed by the iterative and reflexive process of data analysis which was conducted by the researcher. A discussion of these findings in relation to the peer review literature can be found in Chapter 6.

This approach was considered within discussions with the Supervisory team. For a comprehensive exploration of the construct validity of the findings of Study 1 and 2, a larger consensus-based study as a Delphi study (Barret & Heale, 2020) would be required (see Section 9.6: limitations). However, given restrictions of scale and time for this doctoral project, a reflexive review of the findings of Study 1 and 2 was performed in relation to the literature on clinical toolkits, the Osteopathic Practice Standards (OPS) and a draft toolkit, designed as a draft initial pilot to inform practice was derived from the themes, and codes collated within these themes. The codes within the themes were constructed as numbered components of the clinical toolkit and compiled reflexively for suitability under their appropriate components (Appendix 22). The draft toolkit was then reviewed and approved by the Supervisory Team for concordance with the findings of both Study 1 and Study 2.

8.3.2 Preliminary Validation of the Clinical Toolkit

This third study used a semi-structured interview of six registered osteopaths who had experience of managing PR-LP. The purpose of this was to validate the draft of the clinical toolkit to establish preliminary understandings of how feasible this new piece of guidance was, and how applicable it was for osteopathic practice, training, and research. One week prior to the interview, the osteopaths were sent a draft of the Clinical Toolkit (Appendix 22) to reflect on to consider the validity of the data in the context of the research question. Immediately prior to the interview I delivered a short PowerPoint presentation (Appendix 20) which summarised the findings from the first two studies and described the nature and utility of clinical toolkits and their relevance for healthcare professions. The interviewees were asked a range of theme-dependent questions (Fig 8.1) which mapped to the components of the clinical toolkit.

During the interview, an interesting range of responses was collected in relation to the data from Study1, Study2 and clinical toolkits in general. These points either agreed with or debated the nature of the themes, and how feasible the related components of the clinical toolkit would be for osteopathic practice, training, and research. These points are discussed below (Section 8.5) in relation to the relevant findings from the peer review literature.

Overall, the interview proceeded in an unexpected direction. As stated, the osteopaths were provided with the material one week prior to taking part and were advised, as per the participant information sheet (Appendix 15) and email that advised:

This toolkit has been derived from two previous studies. Study 1 aimed to explore through semi-structured interview, the lived experience of pregnancy-related limbo pelvic pain (PR-LP) and how osteopathy impacted this condition from the sufferer's perspective. Study 2 aimed to explore how osteopaths in the UK established the therapeutic alliance (TA) within their management of PR-LP.

You are being asked to reflect on the toolkit, its feasibility and validity within osteopathic care.

A surprising aspect of the data is that although the osteopaths were asked to reflect on the guidance from a strategic perspective, as to how this guidance could impact OC and its related training and research, they generally did not do this. The osteopaths instead made assertions which were predominantly from the first-person perspective. This meant that the osteopaths in this study tended to recount what they did in their own practice rather than discuss the broader aspects of implementation of the Clinical Toolkit (Appendix 21). Where this occurred, the osteopaths were prompted back to the provided guidance and how this may be strategically implemented. However, a first-person perspective prevailed in the majority of instances. This first-person perspective may provide an insight into the nature of OC and is possibly reflected in osteopathic practice and professional identity. The majority of osteopaths in the UK work in private practice and outwith of the NHS. As such, osteopaths are not subject to practise in evidenced based and protocol-driven clinical pathways to manage commonly encountered conditions such as back pain (Guys and St Thomas', 2024). Rather, osteopaths are free under UK common law to practise *eclectically* and utilise mixed approaches from a broad, and sometimes divisive (Gabutti & Draper-Rodi., 2014), epistemological landscape which is, to varying degrees, related to osteopathic principles.

The data from this interview therefore represented more of a “snapshot” of UK osteopaths’ views in relation to the themes of the Clinical Toolkit (Appendix 21) as well as positions on the need for guidance at all. These responses were collated and analysed to form a range of new codes which derived from this study and aligned with the themes in Study 2 (Appendix 22). The nature of the interview impacted the analysis significantly in that whilst new themes were derived from the interview, most of the data consisted of first-person views which viewed the relatability of the Clinical Toolkit (Appendix 21) from the perspective of the “coal face” of UK osteopathic practice. Upon reflection, I considered that my selection of thematic analysis was likely informed by my previous career as an academic. At the stage of study design, I seemed to have projected my own tendency to think strategically and more broadly (about the implementation of clinical guidance) onto the participants in this Study. In fact, the data that arose from this Study was likely more “to the point” than I had anticipated and as such provided a useful overview of the relatability of the findings in a real-world sense. Indeed, whilst several new themes were collated (Appendix 22), the focus of the data which arose from this study was much richer in relation to agreement and disagreement from the perspective of the individual participants. For this reason, the reporting of this final Study’s

findings and subsequent discussion in this chapter are predominantly focussed on this aspect of the data (see Section 8.4: Analysis).

8.3.3 Development of Semi-Structured Focus Group Interview Questions

The focus group questions (Fig 8.1) were developed via several processes. Initially I conducted a reflexive review of the findings of Study 1 and Study 2. Following this, I engaged in a process of review of the literature related to osteopathy, PR-LP and the development of clinical guidance, toolkits and protocols in related professions such as physiotherapy. Additionally, published guidance regarding the structuring of focus group questions (Richard Kruger., 2002) was used to develop themes and topics. Through this process I reflected on my clinical experience of 20 years as a registered osteopath and 15 years as an academic, teaching areas of specialism within osteopathic undergraduate and postgraduate education: these include the clinical management of pregnancy-related problems. As this process continued, the personal reflexive journey across this Doctoral project may, potentially, have been subject to my own personal biases. Please see Section 9.6: limitations for more detail. Additionally, the focus group questions (Figure 8.1) were reviewed for appropriateness and validity by the Supervisory team in the context of the datasets and overarching theoretical basis of the PhD project.

Figure 8.1 Study 3 Semi-Structured Focus Group Interview Questions

Opening question: "Please could you share your views or any points regarding the findings of Study 1: Lived experience of PR-LP from the perspective of the women, their pain and experience of osteopathic care?"

Theme 1: Autonomous Practice

"Please could you comment on the applicability of these ideas and suggestions and how they relate to the development of a clinical toolkit for the management of PR-LP?"

Theme 2: Communication and Reassurance

"Please could you comment on the applicability of these ideas and suggestions and how they relate to the development of a clinical toolkit for the management of PR-LP?"

Theme 3: The Osteopath as Educator

“Please could you comment on the applicability of these ideas and suggestions and how they relate to the development of a clinical toolkit for the management of PR-LP?”

Theme 4: Patients’ Perspectives

“Please could you comment on the applicability of these ideas and suggestions and how they relate to the development of a clinical toolkit for the management of PR-LP?”

Theme 5: Osteopathic Identity

“Please could you comment on the applicability of these ideas and suggestions and how they relate to the development of a clinical toolkit for the management of PR-LP?”

8.3.4 Recruitment of Participants

This study used a semi-structured interview of one group of UK osteopaths who had previous experience of managing PR-LP. Six osteopaths responded in the affirmative to the recruitment process and agreed to be interviewed. The participants were recruited from the professional community of registered osteopaths in the UK. Recruitment was by the following invitations to participate in research (Appendix 14). To ensure that a representative sample of osteopaths across the UK was contacted, these invitations were emailed to the open public register of osteopaths. In a similar manner to Study 2, I selected the major cities and surrounding locales and made a list of all regions of UK osteopathic practice. This list was fed into an online randomiser (<https://www.random.org/lists/>) and systematically emailed all potential osteopathic participants through their osteopathic practices displayed on the register. As before, this randomisation process (Section 6.3.2) was followed to ensure that I did not select areas where I knew many osteopaths who I had trained or was familiar with. 300 osteopathic sole practitioners or clinics were contacted. Additionally, osteopathic practitioners in

South-West Wales were contacted through the South Wales Osteopathic Society (SWOS), with permission obtained from the treasurer of SWOS, a registered osteopath and key staff member of SWOS (Appendix 19). A large number (294) of invited participants either did not reply or stated that they were too busy or not interested in participating. Recruitment continued up until 1 week of the date to the interview and not beyond this. This was to ensure parity of time for reflection on provided material and email guidance (Chapter 8, Section 3.2: Preliminary Validation of the Clinical Toolkit). I decided to proceed with the interview with six participants as this is considered sufficient for focus group research (Cortini et al., 2016) and given the time frame of coordinating participants' time to reflect on the material I wanted to ensure that all participants had a similar amount of time to reflect on the material and email guidance provided. Participants were invited to an online Zoom focus group, which consisted of a brief initial presentation (Appendix 20) and a semi-structured group interview, through online invitations (Appendix 14). Upon expressing interest in participating, participants were provided with a patient invitation sheet (Appendix 15) and a consent form highlighting consent to being recorded by Zoom and Dictaphone (Appendix 16). The interview explored, via thematic analysis and concordance, the feasibility and relevance of the proposed clinical toolkit for osteopathic practice, training and research.

8.3.5 Data Collection

The semi-structured interviews were held over 1.5 hours with a short break in the middle for comfort. One week prior to the interview the osteopaths were sent an electronic copy of the proposed Clinical Toolkit (Appendix 21) with email guidance (Chapter 8, Section 3.2: Preliminary Validation of the Clinical Toolkit). The Interview explored the osteopaths' views on the feasibility of the proposed clinical toolkit and its relevance to osteopathic practice, training and research. The data from this study was recorded and transcribed verbatim. The data was then thematically analysed consistent with the process for focus groups (Braun & Clarke, 2006) to establish relevant themes and relationships as well as general concordance with the clinical toolkit.

8.3.6 Inclusion Criteria

UK registered osteopaths of at least two years' experience who had direct experiencing of managing PR-LP were invited to participate. Additionally, UK registered osteopaths who had additional qualifications related to managing PR-LP and or held an academic post and were involved in teaching osteopathy were also invited to participate.

8.3.7 Exclusion Criteria

UK registered osteopaths of less than two years' experience or without experience of managing PR-LP were not invited to participate in this study. Additionally, osteopathically qualified individuals but who are currently of "non-practising" status or had removed from the register were not invited to

participate.

8.4 Analysis

Following the semi-structured interview for this third study I read and re-read the transcripts several times in order to familiarise myself with the data set in its entirety, in the same manner as was previously done for Study 2 (Fig 4.3) This process began to capture initial impressions, ideas and notable features of the dataset. Similarly, this process was completed by hand with written notes to generate codes which occurred and had potential relevance for the research question. Themes were then reviewed via an iterative and reflexive process to ensure relevant alignment with coded extracts and the entire dataset. (Braun & Clarke, 2006)

As mentioned above (Section 6.3.2: Preliminary Validation of the Clinical Toolkit), the nature and direction of the interview transpired to be predominantly focussed on whether the osteopaths concurred with the toolkit and its respective components. This contrasted with predicted findings at the stage of study design in that the osteopaths generally provided rich detail regarding why they did or did not agree with in the toolkit, rather than overarching views on feasibility of implementation to UK practice, training, and research. This made the data less amenable to the development of a richer thematic approach and more suitable for an analysis of the osteopaths' views from a *prima facie* perspective. The findings and subsequent discussion of this chapter are therefore reported with these perspectives at the forefront of what this study adds to the existing knowledge base as well as what this means for how relevant the findings across the entire dataset of the Doctoral project.

8.5 Findings

The dataset from this study is twofold. Firstly, the data demonstrates similarity with the findings of Study 1 (IPA lived experience of PR-LP) and Study 2 (TA of OC in PR-LP). Here, the osteopaths report understandings of the lived experience of PR-LP and the impact of OC on the condition. Secondly, the osteopaths provide detail of thematic aspects of the clinical toolkit which may confirm or contest validity of these constructs. This highlights potential areas for development in the osteopathic management of PR-LP. As mentioned above, during the interview the osteopaths asserted views representing data which illustrated osteopathic perspectives on toolkits and clinical guidance as well as the management of PR-LP. This data was coded and thematically analysed in accordance with Braun and Clarke, (2006) These new codes aligned to the themes which were reflexively constructed in Study 2 and can be found in Appendix 22.

8.5.1 Osteopathic understandings related to Study 1 (IPA of lived experience)

The osteopaths in this study demonstrated an ability to situate themselves in and understand the lived experience of PR-LP sufferers which aligned to the findings of Study 1. Principally these were centred around rapid improvements in physical capacity in response to OC. Interestingly this also aligned to the women's experience (Study 1) that OC seemed able to mediate the transition from persistent pain which had been established for a significant amount of time during pregnancy:

So same as what you said earlier in the presentation, I do find that pregnant women tend to respond quite quickly. And they tend to show improvements within just a few sessions, even if the pain that they had was quite long-lasting. And I feel like they definitely respond quite well to reassurance. Abella.

Abella (below) also unpacks conceptual understandings of how OC improved PR-LP sufferers were ability to engage in ADLs and return to normal living after finding relief from PR-LP in OC. Abella echoes the involvement of reassurance within this aspect of the lived experience of OC during PR-LP.

So I'm looking at the first point, in the patients' perspectives. So about the capabilities of osteopathic care. In this case, I think from my experience, it helps with pain relief. It helps with moving better. So people's quality of life, and by quality of life, I mean making it easier for them to mirror, making it easier for them to do certain things that they found hard before maybe like bending down for the washing machine, or reaching up a cupboard or walking for half hour, so it can be the small things in their lives that they found difficult to do before and obviously provide a lot of reassurance. Abella.

A range of further understanding which aligned to the findings in Study 1 also emerged from the data. These were centred around the reported improvements in psychological wellbeing which PR-LP sufferers found with OC. Principally these findings aligned to reductions in concepts such as fear of pregnancy, feelings of vulnerability, mental defeat and how PR-LP led women to have cognitions focussed on being "bad mums" or "bad spouses". The osteopaths in this study generally reported that they, like the osteopaths in Study 1 and Study 2 utilised reassurance in treatment to facilitate improvements in wellbeing:

but the being a good mother. There's a lot of pressure on women to be the perfect mother. If they're in groups, there's usually a lot of comparing, or they're doing this, and they're doing that. And I can't do this. And because I now have this physical complaint, I heard that I have to

move this amount of minutes a day, because that's gonna be more healthy for my baby. I think it is important to confirm to these women that they're doing a good job, and you are being a good mom. Anna

8.5.2 Osteopathic understandings related to Study 2 (TA of the therapeutic alliance In PR-LP)

During the semi-structured interview, the osteopaths in this study commented extensively with regards to the place that OC has in the management of PR-LP. As previously stated, a lot of talk was centred around first-person perspectives regarding what was representative of individual praxis rather than strategic implementation of the draft guidance. This required several prompts from the researcher to focus the group on the research question at hand. Despite this however, interesting perspectives and assertions emerged which may be more meaningful for understanding the nature of professional osteopathic practice both regarding PR-LP and in general. Below follows the analysis of these perspectives which are grouped by their relation to the themes in Study 2 as well as the proposed clinical toolkit.

8.5.2.1 Theme 1: Autonomous Practice

The osteopaths aligned their understandings of this component of the toolkit from (mostly) first-person perspectives. The key areas which were relevant to the osteopaths were managing risk, the concept of regional interdependence, using outcomes as context and being adaptable to the varied experience of PR-LP. Both the themes and guidance points from the below component of the toolkit Autonomous Practice (AP)(Fig 8.2) are discussed in relation to relative agreement or disagreement that the osteopaths had.

Figure 8.2 Clinical Toolkit Section 1

Autonomous Practice (AP)
AP1: Begin management by triaging patient for risks to mother and baby
AP2: Discuss theoretical risks of osteopathic care to pregnancy
AP3: Identify any fear or worry around PR_LP and explain how structure and function and related techniques may soothe pain

AP4: Be adaptable - consider modifying your assessment and treatment to more general and less specific treatment where appropriate.

AP5: Communicate positive changes that occur in treatment and at successive visits

Screening for medical risk and comorbidities featured within this group of osteopaths in a similar way to Study 2 Theme 1 Code 3. Across several responses, the osteopaths reaffirmed their relationship with hypothetic-deductive reasoning and how this formed part of their identity as primary care practitioners. This concept, however, divided the osteopaths in terms of pregnancy being inherently special and a possible area for which speciality training should be provided. Further confirmation of key concepts to OC in PRLP which aligned to the theme of AP were how the osteopaths established both clinical reasoning and professional identity through the previously identified concept of regional interdependence (Study2 Theme 1 Code 1). Similar to the previous study, the osteopaths affirmed this concept with how pregnancy represented a developing situation which impacted body areas over time. This was viewed within the concept of managing the risk of pre-existing conditions (spondylolisthesis):

You also get people who have things like spondylolisthesis. They've never been aware of until they've had a pregnancy, and then bang! so I think, like, I think pregnancy can sometimes... Well, you're unaware of certain issues until your body changes shape during your pregnancy.
Harold

In addition to how this linked to managing risk, the concept of regional interdependence was also given importance from the perspective of appreciating the adaptation (to pregnancy) that impacted the body's physical response to pregnancy in complex ways that included responses to changes in hormones (e.g., relaxin). These points of similarity represented agreement with the clinical toolkit components AP1 and AP2:

there's also just the fact that there's a body that's changing, and you can have some complaints on different sides' muscles, and when you are attuned to the body, and you can think of all the structures that are involved, then you can still treat them just fine, but you have to be aware enough of all the structures that aren't, in fact involved, which is why it

could be more specialist. Because there's certain patterns that you just see more in pregnancy, and it's good to know things such as when does relaxin really kick in. And why is that important? For what stage people are in, those are important to know when treating a pregnant patient, I think. Anna

The theme of regional interdependence, which is central to osteopathic clinical reasoning interacted with key components of how osteopaths managed their own therapeutic dialogue. This was evident in this study via many responses. With respect to this theme, this was seen in how the osteopaths managed and discussed (during treatment) physical outcomes as the context for how they made clinical decisions. This concept of regional interdependence was rooted in many other aspects of how osteopaths defined their construction of TA (see Section 8.5.5 Osteopathic Identity). As discussed, when asked about the implementation of the Clinical Toolkit (Appendix 21), the osteopaths in this study oriented their discussions primarily around their own practice rather than from a broader strategic perspective which addressed the utility of the toolkit to the osteopathic profession in general. This was seen in a lot of talk which was rooted in concepts such as “I would do that” or “I do that” rather than how the guidance in the form of the toolkit could impact OC on a national level. The osteopaths in this third study suggested predominantly first-person perspectives on the sub theme of adaptability (Study 2 Theme 1 Code 4) rather than how the tendency to be adaptable and adjust therapeutic approaches could be considered as an important aspect of formal guidance in the management of PR-LP. The below excerpt illustrates a typical example of this whereby the researcher attempted to establish the relevance of the themes which made up the component parts of the Clinical Toolkit (Appendix 21) and the interviewee continued to assert a first-person perspective. Of note here is that whilst the osteopaths did not comment more broadly regarding the challenges of implementing the toolkit, they did detail that the points AP1-5 were representative of their own clinical practice:

You can only do an assessment to the point where the patient can cope with it. You can't push it beyond that point, and that's certainly the case with any acute patient. Duncan

I think you've got to warn people that they might feel a little bit of discomfort after a treatment and you know if a patient comes and sees you, and then they're paying for 3 or 4 days, and they come back. They're usually a bit pissed off (sic) that you didn't warn them that they might feel a reaction to the treatment. Harold

A further example of the this can be seen below. Abella reports how she establishes her screening process within a framework of assessment that guides clinical decision making. Of note here is the collaborative dialogue with which she attempts work with her patients and the small details of their experience, in consideration of how they are feeling (Abella in 8.5.1). This form of collaborative approach was found significantly throughout Study 2 and was representative of the way in which osteopaths in this study viewed the patient centred nature of care (See sections 8.5.2 : Communication and Reassurance and 8.5.4: Patients' Perspectives below).

I try and take all of the things that we can compare later to be able to measure the improvements. And I always ask about if they have been diagnosed with anything before. If they had any scans done, I try and basically do my screening for all the red flags. So did they experience high blood pressure before? Did they have their regular checks with the nurses to make sure that everything's okay, and try and get all the feedback that I can to make sure that everything is going nicely and there's nothing to worry about. And if it doesn't seem like there's any red flags going on, then I'm happy to carry on with treatment as normal. Abella

8.5.2.2 Theme 2: Communication and Reassurance

This component of the Clinical Toolkit (Appendix 21) generated much discussion from the osteopaths in this study. Mostly this was supportive in terms of agreement with the nature of osteopathic practice. The osteopaths affirmed relationships with communication and reassurance, time and trust, connection to the baby, ongoing support and Language and Meaning (Study 2 Themes 2 Code 5-8) Both the themes and guidance points from the below component of the toolkit Communication and Reassurance (Fig 8.2) are discussed in relation to relative agreement or disagreement that the osteopaths had.

Figure 8.3 Clinical Toolkit Section 2

Communication and Reassurance (CR)
CR1: Give affective (comforting) and cognitive (educational) reassurance to increase your patient's ability to cope.
CR2: Take time to build trust, demonstrate empathy, compassion and understand the patient's boundaries.

CR3: Avoid threatening language which stresses concepts such as “alignment” and “positional lesions”.
CR4: Aim to establish the patient’s understanding of PR-LP and how osteopathic care can impact this.
CR5: Strengthen your patient’s sense of agency to re-empower them in their roles (mother, spouse, caregiver) for pre and post-partum.
CR6: Be sensitive to how patients can feel isolated by PR-LP, develop strategies which can help with this feeling.

When considering communication and reassurance (Study 2 Theme 2 Code 1) the osteopaths’ responses were characterised by more general assertions which aligned to cognitive reassurance such as below:

So I'm looking at the first point, in the patient's perspectives. So, about the capabilities of osteopathic care. In this case, I think from my experience, it helps with pain relief. It helps with moving better. So people's quality of life, and by quality of life, I mean making it easier for them to mirror, making it easier for them to do certain things that they found hard before ..so it can be the small things in their lives that they found difficult to do before and obviously provide a lot of reassurance. . Abella.

In the above excerpt Abella refers to the toolkit in question however, this is still centred around how this is reflective of what “she does” with her PR-LP patients. What is interesting is that this example, which Abella frames from her own perspective is in the context of the increased mobility and wellbeing which the PR-LP sufferers in Study 1 reported were characteristic of the effect of OC. Her approach, which is focused on supporting her patients’ understanding of PR-LP demonstrates agreement with clinical toolkit components CR 1, CR2, CR3 and CR5

The osteopaths also, more specifically affirmed a relationship with affective reassurance which was interesting as they made no real distinction between how the two forms of reassurance were separate

as according to (Coia & Morley, 1998). Rather the osteopaths considered that blending both cognitive and affective reassurance was a natural and effective part of therapy. This highlighted a form of rolling and adaptable dialogue that was typical of the osteopaths' approach to PR-LP. It is natural to assume that both these forms of reassurance would follow naturally in a therapeutic dialogue however the work of Pincus et al., (2013) states that affective communication is of no significant lasting value and is counterproductive in the context of a more utilisable and effective approach to *cognitive* reassurance. When prompted on this the osteopaths disagreed that their approach was characterised by this separation and that both forms of communication were typical of osteopathic practice. The osteopaths highlighted that this was perhaps an aspect which defined the patient centred and individualised nature of OC when compared to other professions:

So they will obviously ...I would, find the educational thing actually comforting. Because when you're educating people, you can educate them in a way that that gives them comfort, what's going on, and how things are likely to develop, and so on in a positive way. Then that's obviously going to be to be comforting as well. Duncan

Can you pick up on any of those points here Perhaps the amount of time it takes to build these trust trusting relationships, demonstrating empathy and compassion? I

You develop that fairly quickly, you know, within a couple of sessions I would have thought that the patient is already beginning to be to be much more comfortable. Obviously, when they don't know you, and so on, that that can be quite some difficult. But as I think as soon as you start to get into the treatment and getting them just comfortable with you. That happens pretty quickly. Duncan

And do you think, do we find that we give that alongside the treatment? Is there a part where we're communicating all these things, and then we're just treating? Or do we do it at the same time? I

They're in pain, I think. First and foremost, they want acknowledgement that they're not making this up. They are actually in pain, and they want to be heard and seen, and know that you actually care about the fact that they are in pain. And you want to take this away, and you want to help them. But just good intention is not gonna' get you there, because then you could just pat them on the back. They also want to know how and why this thing you're doing is gonna help them. And it's that combination and gives a massive reassurance. Yes, I

understand the emotional side, but I also know the theory behind it, so I can provide you with both. I can give you the care that you need emotionally and physically. Duncan

In the long excerpt above we see that Duncan considers the two defined components of therapeutic reassurance to be essentially indistinguishable from each other. This concept seemed to characterise the rather fluid way in which osteopaths provided reassurance to empower their PR-LP patients. A key aspect of this in relation to the data from the previous two studies can be seen where Duncan highlights care that he delivers “emotionally and physically”. The combination of these two forms of comfort and therapy featured significantly in both the women’s lived experience from Study 1 and the osteopath’s establishment of the TA in Study 2 where OC is perceived to be a blended form of psycho-physical care (Joe, Chapter 6, Page 42). Duncan’s approach and what he prioritises in PR-LP therefore demonstrate agreement with clinical toolkit points CR1, CR2 and CR5. The osteopaths did not however expand much further on how communication and reassurance as concepts could indeed be developed further, or indeed that there was a need for this to occur. The general understanding from the interview was that these things are tacit and inherent to any therapeutic encounter within OC. This is captured by Harold (below):

I suppose you can leave things open. You? Do you have any questions?”...and that if the person wishes to discuss things they can, if they'd rather keep schtum. They can. I mean, most. Most of the stuff on this list to me is. you know, is fairly general for any patient. Harold

However, despite the osteopaths highlighting that communication and reassurance seemed to happen organically and in a blended manner they did strongly affirm a relationship between explaining things to patients (see below, Section 8.6.3: the Osteopath as Educator). This is particularly important as it appeared to be a mainstay of how therapy was conducted. Again, the osteopaths talked very significantly from a first-person perspective which resulted in data which lacked a fuller discourse on how the Clinical Toolkit (Appendix 21) could be implemented or how relevant it may be as guidance in the management of PR-LP. However, this data was illustrative of practice and aligned well with the findings from Study 2. This aspect of what the data tells us is important for the care of patients who attend osteopathic appointments with PR-LP. In the excerpt below we see a potentially contradictory statement regarding this. Duncan advocates for an individualised approach with OC yet he highlights the “identical” nature of the (his) osteopathic approach.

Because every patient is an individual, and you assess them absolutely, you know, for their individual problems. And pregnancy is just a different category, really, but the osteopathic approach is identical, you know?. And so I wouldn't particularly approach them in any different way. You find what's there and you treat what's in and under your hands. Duncan

This perhaps uncritical view on tacit understandings may reflect a tendency towards resolute adherence to traditional osteopathic principles as a guiding framework for care in the absence of more structured guidance which is lacking regarding the treatment of pregnant women (ASA., 2024) although his excerpt does align with the code (Theme 5, Code 25). This apparent lack of criticality was highlighted within the data by some excerpts relevant to the theme of Language and Meaning (Study 2 Theme 2, Code 7). Specifically, relevant here is the use of nocebic terminology. Nocebic terminology is understood to be spoken terms which increase the threatening nature of the pain experience and is related to patient dependence, reductions in engagement with pro-active health behaviours as well as increased pain related anxiety and fear (Kashyap et al., 2023). Typically, in MSK practice this manifests as terms which related to describing patients' anatomy as the source of pain. Terms such as "rotated", "malaligned" and "twisted" carry negative valence and are almost ubiquitously inaccurate based on the reality of human function (Lederman, 2011; Mcgrath, 2004). We see below an example of discourse in this study where this tendency was highlighted from Study 2 and informed the creation of the Clinical Toolkit (Appendix 21) to develop approaches to language which were relevant to guidance:

I certainly think you should avoid words, the patient may be not understanding, and which could increase their anxiety, and so on but don't think I don't think particularly positional language is likely to be a a major stumbling block. That'll be my opinion. Anyway. Duncan

I definitely avoid using terms such as twisted or out of alignment, or things like that, because I tend to find that these things start to get their own life and just become bigger and bigger and have a very good view of their own anatomy. They don't know the joints like we do, and if we use certain terms they can suddenly see this image of building blocks, and there's one completely over here, and they start avoiding movement because they're really scared something is gonna shift and permanently fall out of their spine. So, I do avoid using such terms, yeah. Anna

From this it is evident that the osteopaths were divided on the use of positional/ nocebic terminology in PR-LP. As such, despite clear discussion on how to implement the toolkit in this area, the contention of this point indicates the need for guidance on the use of terminology which is clearly understood to negatively impact clinical outcomes. A further component of this theme of the toolkit which generated a lot of similarity of discussion with the previous two studies was the concept of Time and Trust (Study 2: Theme 2, Code 6). This concept was consistently reaffirmed by the osteopaths in this study as both a key aspect of OC in PR-LP and a defining aspect of the uniqueness of the osteopathic approach (See Section 8.5.5: Osteopathic Identity).

But mainly because we've got more time, you know that. So when you've got the patient, you know, on your table for 20 min, or whatever. There's lots of time for them to ask questions or to raise any worries that they have. I don't particularly go looking for problems like that. But if the patient raises something, I'm more than happy to listen to them. Duncan

In the example above, which was typical of the osteopaths' views in this study we see that Duncan highlights what the osteopaths uniformly agreed was a defining aspect of OC; the concept of having more time with their patients than other healthcare providers (See also Section 8.5.5 Osteopathic Identity). Within the management of PR-LP this meant midwives, doctors and physiotherapists. The osteopaths affirmed that this extra time allowed them the time to put patients at ease and build therapeutic relationships which were characterised by trust. This aligned with the results of Study 1 and Study 2 whereby both PR-LP sufferers and osteopaths considered this important. Time and subsequent therapeutic dialogue were considered to be essential to provide the platform for strategies which supported empowerment and reengagement with ADLs. Given the frequency with which the osteopaths across Studies 2 and 3 reaffirmed Time and Trust, this represents a high level of agreement with the toolkit component CR2.

Pertinent to this theme of communication and reassurance, the sub theme of Connection to the Baby (Study Theme 2, Code 10) did occur. However, in this study this was generally considered to be from a more risk management perspective. Harold, below, details how the presence of the baby presents an additional concern regarding management and as such discusses this in terms of pregnancy as a stand-alone area of specialism in OC. This contrasts with the osteopaths in Study 2 who considered this from the mothers' perspectives as a nuanced aspect of care within how the mother *felt* about the presence of the baby. It is interesting to note that Harold, in the example below is not immediately amenable to formalised guidance which informs clinical care. Acknowledging the presence of the baby

in this way may have facilitated further strengthening of the women's role as a mother, in accordance with toolkit component CR5.

So when we look at the first theme, which is Autonomous Practice Could I ask you to comment on the applicability of these ideas and suggestions? And how they relate to the development of the possible clinical toolkit for the development of Prlp? I

I'm not a great fan of these things. Harold

Um hm. I

I think you know. I think they can have their uses. I mean, they're like stabilizers when you learn to ride the bicycle in a way. But they might be of use. If you're not making progress. It can be like, you know, it's a bit like a recipe. And you might. You might have overlooked something or missed something, or if it's a type of, you know, for instance, it might be a great use to me, so it'd be good to have a list of things to go through. yeah. So as the first thing that comes up is the baby because you are really dealing with 2 people, not one person.

Harold

8.5.2.3 Theme 3: The Osteopath as Educator

When reflecting upon this component of the toolkit, the osteopaths in this study affirmed relationships with the subthemes of Managing Expectations and Offering explanations (Study 2 Themes 3, Codes 11 and 14) as a mainstay of OC in PR-LP. Relevant to this theme the osteopaths also considered normalising pregnancy (Study 2: Theme 3, Code 12) with the women in their care. In addition to this, the osteopaths were reflective around what their remit was within PR-LP (Study 2: Theme 4, Code 17) which aligned to the sub-theme of Practitioner Limitations (Study 3: Theme 4, Code 18). Both the themes and guidance points from the below component of the toolkit 'The Osteopath as Educator' (Fig 8.4) are discussed in relation to relative agreement or disagreement that the osteopaths had.

Figure 8.4 Clinical Toolkit Section 3

The Osteopath as Educator (OE)
OE1: Prioritise understanding and managing patient expectations.

OE2: Use active listening to understand the patient's narrative as much as possible.
OE3: Normalise pregnancy and PR-LP.
OE4: Assess your patient's understanding of the advice of other healthcare providers (OHPs) and address in clearly and simply anything that is not understood.
OE5: Modify recreational activity and ADLS rather than stop activities.

The osteopaths in this study described OC as being understood by their patients as being rooted in “manual therapy”, the delivery of hands-on techniques. However, they further described the components of OC as those which promoted understandings around therapeutic goals and the establishment of wellbeing in PR-LP. The concept of “active listening” (toolkit component OE2) was agreed as an aspect of OC which worked to provide an understanding of the PR-LP patient's need and thus what would determine individualised, patient-centred care. This idea was seen to interact with similar themes from the underpinning data which formed the toolkit. Specifically, this was being adaptable (Study 2 Theme 1.4) and the perception of osteopathic uniqueness (see Section 8.6.5 below Osteopathic Identity). Abella highlights below that OC is more than manual therapy and includes a broader approach of considering her patients' wellbeing. Her excerpt like many of the excerpts from this study positions OC as “being different” from other professions in that the nature of therapy is specific to the individual patient:

I think we're known for our manual therapies, mainly maybe a little bit of exercise prescription, but we offer a lot more alongside this. So, we offer active listening. We offer just lifestyle advice, generally guidance, and this can be different to a patient, to another. It really depends on what that specific patient is lacking and how that impacts them and impacts their recovery. So, the advice is going to be different ... according to the case that we get. which I think may make us a bit different than other professions. Abella

Therapeutic strategies which aligned with points OE1, 3 and 5 also were discussed in terms of agreement throughout the dataset. Similar to the findings in Study 2, the osteopaths' positions were consistent with managing expectations, normalising pregnancy and modifying ADLS to facilitate a continued engagement for those living with PR-LP:

Do you think this is generally the advice that people are given in training or just. Do you think this reflects general practice? -I

I think it should. The only thing I think it is lacking. Maybe just because it's not written down is I always find it very important to. Yes, it's important to listen. But I also like to get the patients engaged with it in themselves. So, rather than me, modifying their activities, I'll try to kind of work together with them to come to a solution. So they have some self-agency. They feel a bit more responsible for their own health rather than me, just giving them a prescription, as if I'm giving them a drug, I'll want to work together with them and see, okay, what can you do? And how about you really try and feel how you feel after exercise, and just get them more engaged with it. Sofia

Sofia, above, highlights however that osteopathic education and training should be more focussed on establishing agency within the TA of PR-LP. Her excerpts also indicates that through individualised management, she aims to strengthen the “self” and “agency” and the return to normal activity in PR-LP. This further aligned with the osteopaths' approaches in Study 2 (Theme 2, Code 9 and Theme 3, Code 17). Her assertion that this form of approach should be “written down” highlights perhaps the need for more structured guidance on how PR-LP sufferers and osteopathic patients in general could be supported to develop agency.

Offering explanations (toolkit component OE1 and Study 2 Theme 3, Code 15) was a common theme amongst the osteopaths in this study. Again the first-person perspective prevailed in terms of the context within how they felt that the toolkit was applicable however, this seemed to represent a significant aspect of how OC was delivered in PR-LP. Below we see an example of how Harold situates himself within the patient's point of view to do this. This type of example was common in that the osteopaths established what *they* did in relation to how the women in their care would be feeling (as they perceived it).

what appears to you and I as common sense, a lot of people are completely oblivious to from that perspective, I mean you only become aware of these things when you speak with a person, and you make suggestions and see what they're ... their replies are. I wonder about age of people as well. I mean I'll know a number of women who have had IVF later on, now in their forties, and they've had the first child, and they've been absolutely whacked because they've not realized how exhausting it is bringing up a wee one and also going through a pregnancy at that age. Harold

Arguably this shows that much like in the findings from Study 2, the osteopaths centred their care around the specific and relatable needs of the PR-LP sufferer. However, like much of the data from this study, this lacked a more strategic approach as per the research question at hand. When prompted regarding the toolkit, the osteopaths often returned to the concept of “what I’d do”. As discussed, this may reflect both the insular nature of osteopathic practice within the UK healthcare landscape as well as a person-centred individualised approach (See discussion).

What do you think about these ideas of how structure and function relate to techniques that might soothe pain in the context of fear or worry. I

Yes, I would be doing that. I mean, I don't specialize in PR-LP, In pregnancy, I'll see babies all the time. But certainly, you know, with the changes it's kind of going on. I would be explaining as to what's happening and why they're feeling the pain where they're feeling it. And you know how osteopathy can help. Davina

As discussed, strengthening Agency (Study 2: Theme 3, Code 16) with a view to empowering the women in their care also featured in this aspect of the osteopath’s discussion of the proposed toolkit. The osteopaths considered that this was a key feature of OC. This concept aligned to the findings from Study 1 (Chapter 5, Section 5.4) whereby women found that the experience of OC helped facilitate the return to independent and pro-active living which was beneficial in PR-LP. Similarly, this aspect of OC was strongly reaffirmed by the osteopathic practitioners in Study 2 (Chapter 6, Section 7.4) whereby strategies which bolstered agency were at the heart of what they considered to be good management in PR-LP.

Within the components of the toolkit, a significant amount of the talk during this study seemed to be generated around the two themes of The Osteopath as Educator (This Theme) and Theme 4: Patients’ Perspectives (Section 8.6.4). This is interesting as this finding was similar to Study 2, where these themes generated the most discussion. This aspect of the data collection across Study 2 and Study 3

may highlight that OC in PR-LP is rooted in how the osteopaths communicate with the women in their care and how they navigate the therapeutic interaction to reduce pain and increase wellbeing. In analysing the respective transcripts of these two studies it is apparent that the sub themes cross over or “interact” with each other with much more regularity when osteopaths discuss the management of PR-LP. Below is an example of this, from Study 3 whereby Anna highlights her understanding of several subthemes from the toolkit which range across both the Osteopath as Educator and Patient’s perspectives. Anna discusses the nature of agency and Agency/Empowerment (Study 2 Theme 3, Code 17) within the context of Emotions (Study 2 Theme 4, Code 23). What is also interesting here is the now familiar pattern of the osteopaths in this study affirming relationships with first-person perspectives rather than a broader understanding of the implementation of the toolkit and its relevance to osteopathic practice on a strategic or national level. The notion of increasing confidence within the patient’s own body here is also interesting with regard to the divide in osteopathic opinion regarding the use of nocebic or positional language, as these constructs are well established to reduce bodily confidence and lead to adverse cognitions such as pain related fear and catastrophising (Kashyap et al., 2023)

But there's also those that don't want it. And I think the emotional impact of that. If you are treating them as this breakable thing is not going to help them a lot if they don't want that. and they're getting that everywhere, and their partners saying, Oh, don't do all the stuff, and the mom is going: Oh, don't do this stuff and at work, or just drop all of this, and you become less and less of a person, and you just become someone who's carrying a child, whereas I think it's important to give them strength and support that part of the emotion. So, give them confidence in their body again. Anna

Further related components within the Theme of the Osteopath as educator included Managing Expectations (Study 2: Theme 3, Code 11) and Normalising Pregnancy (Study 2: Theme 3, Code 12). These concepts were uniformly considered to be mainstays of OC and that their application was consistent with best practice in the management of PR-LP. The osteopaths affirmed these components of the toolkit (OE1 and OE3) as representative of their own practice rather than commenting on the broader implications of how this could inform current practice. Duncan’s excerpt below illustrates how osteopaths generally perceived pregnancy to be a normal process which was not pathological and as such should generally be viewed from a positive position in OC.

It's important that they think that it is a normal process that they're going through. It isn't some disease that they've got. So the more they accept this as a as a normal situation, that that will take a lot of the of the negative sort of feelings out of it..... It's all about you know, giving them confidence in in the process. Duncan

Reframing the advice of others (Study 2: Theme 3, Code 13) also featured within how OC featured in PR-LP. This concept which underpinned point OE4 which indicated agreement for this point in the toolkit. Practitioners in Study 2 often found that as part of OC they felt the need to offer perspectives on the clinical advice that had been provided by GPS, physiotherapists and midwives. This also, on occasion extended to a recontextualising of advice which was gained from family members or the community of PR-LP sufferers and online advice. The women in Study 1 experienced this reframing of advice in OC as useful to guide them back to less threatening understanding of PR-LP and re-engagement in ADLS (Chapter 5, Section 5.2). Agreement with this concept as a component of OC was also found in this study whereby osteopaths assisted in interpreting what had been communicated to PR-LP sufferers by other healthcare professionals. Below, we see Harold's example which highlights the nature of how this discourse takes place within other themes and components related to the toolkit. Interactions with Time and Trust (Study 2: Theme 2, Code 6) are highlighted within the further delineation of OC and its perception as something unique and distinct from other forms of care (Study 2: theme 5, Code 25).

I mean, I know I mean the majority of people who come to see me, me when they've been to see a doctor or been in the hospital, they've had absolutely no explanation what's happening? ...They're not told anything about what's going on, so they're equally as confused coming out as they were when they went in. so I think that's one of the real strengths of us osteopaths, as we do tend to spend an awful lot of time with patients, and explaining to them what's going on. I mean we have, you know. when I see a patient the first for the first visit I have. I take an hour, and that gives you, you know. plenty of time to explain to the patient what's happening. Harold

8.5.2.4 Theme 4: Patient's Perspectives

The Osteopaths reflections on the clinical toolkit aligned to similar themes from Study 2 which seemed to represent a general agreement with the areas of good practice which this component of the toolkit highlighted. When asked regarding the relevance of the key areas within this theme, the osteopaths considered that remaining reflective to the limitations and scope of osteopathy, the lived experience narrative of PR-LP and associated emotional impact, were all relevant to OC. The osteopaths also

affirmed understandings of how the role of the partner and reframing the advice of others (Study 2 Theme, Code 13) featured in the management of PR-LP. Both the themes and guidance points from the below component of the toolkit Patient's Perspectives (Fig 8.5) are discussed in relation to relative agreement or disagreement that the osteopaths had.

Figure 8.5 Clinical Toolkit Section 4

Patients' Perspectives (PP)
PP1: Reflect on the limitations and capabilities of osteopathic care in PR-LP,
PP2: Consider the patients lived experience of PR-LP and how this impacts their thoughts about their health, their pregnancy and coping with day to day life.
PP3: Reflect on how the patient's role and identity as a spouse, parent or woman in general may be impacted by PR-LP
PP4: Reflect on how isolation could be a feature of PR-LP and what strategies may be employed to assist with coping.
PP5: Be open to discussing the emotional impact of PR-LP and be sensitive to how this guides management.

The concept of remaining reflective to the limitations of osteopathy in PR-LP (PP1) were considered from positions of primary care autonomy. This led osteopaths to concur with this toolkit component and that understanding their PR-LP patients' comorbidities within the context of pregnancy were a part of the TA in OC. Additionally, the osteopaths highlighted areas where they did not feel their remit extended to e.g. reviewing medication. This is unsurprising given that osteopaths are primary care health practitioners who work, typically within a "first contact" environment.

As discussed, the use of first-person perspectives was pre-eminent in the osteopaths in this study. However, this tendency was nuanced and illustrated as perhaps, less understood component of OC. The osteopaths, from this first-person perspective tended to situate themselves within their PR-LP patient's narratives, forming "they must feel like this" or "if they are dealing with that" constructs. This aligned consistently with the groups of osteopaths within Study 2 and as such represented a further commonality between the groups and how the TA was established within the osteopathic

management of PR-LP. These projected patient narratives focused at times on how PR-LP sufferers would cope with the lived experience of their disease, which corresponded with toolkit component PP1. In the example below, Harold projects an understanding of this to understand the impact that family members and individual patient backgrounds had on the patient's narrative.

I wonder, I mean. what about the pregnant woman's mother? Do these things often continue in families? I mean, if a mother had had pelvic and low back issues. will the daughter be having it? Did the mother have it? How did she handle it, whatever. I don't know. It's You sometimes find quite a lot of interesting things. If you start asking questions about the family.
Harold

Understanding the tendency to remain reflective (Study 2: Theme 4 Code 17) was also a point of agreement for how the osteopaths understood how the PR-LP patient's role(s) were impacted by their pain experience. As discussed, the women in Study 1 experienced negative self-appraisals of their roles as spouses and parents. This was due to PR-LP making women feel unable to fulfil duties which they associated with these roles and as such experience more related psychological distress. The excerpt below illustrates how the osteopaths (in this case Harold) were able to situate themselves within the narrative of the women who described being a "bad mum". Additionally, the context of this excerpt below illustrates how Anna also situates herself within the narrative of women experiencing PR-LP and how this may impact their thoughts and day to day living (PP2).

Say, you had really bad pain that you didn't get managed very well at the end of your pregnancy, somewhere in a third trimester, where you kind of accept that this is gonna be something that you experience. And then you start feeling that pain at 16 weeks during a second pregnancy. You immediately then assume it's gonna be just as bad as last time, or even worse, because it started earlier. And then, you see, this road downwards. That's just going to mean you can't do anything, and you have this little one you already have to take care of, and it just spirals out of control quickly. Anna

I mean, if you, if you've got a bad back, or a bad pelvis, and you've got a 2 year old to look after as well. That wants picked up, and so on. It must be absolute murder. But I don't know. I mean I'm a bloke, so I sometimes find these things. You know I'll do my best to empathise. But sometimes I miss the point. Harold

Patients' narratives of PR-LP were further considered in relation to person-specific understandings of pain from the perspective of how family members or social groups may influence the cognitions of

the PR-LP sufferer. This represented agreement with point PP2 and its related underpinning theme (Patients' Perspectives). The osteopaths highlighted that in understanding this aspect of PR-LP they promoted the building of confidence to cope with the condition within the context of OC. This represented both an agreement with understanding patients' perspectives in general and the interaction of other aspects of the findings from Study 2 such as Time and Trust (Study 2 Theme 2, Code 6), Agency (Study 2: Theme 3, Code 16) and Empowerment (Study 2: Theme 2, Code 9). Duncan's example below highlights that irrespective of OC being characterised by touch-based therapy he considers the experience of PR-LP as also needing an approach which is focussed on understanding psychological wellbeing; "without the need for physical treatment":

It's just obviously as our understanding of pain, you know, grows we know that all pain, you know, comes from the brain. It's got nothing to do with the body at all. And so pain relates entirely to what the brain is feeling and how threatened it's feeling in that situation. And those types of experiences. That you know your friends or family that's that might have passed on to you are going to influence the amount of pain you experience. And that's why I mean, confidence really is. The most important thing that can do is to build that confidence back because the minute that you start to change that, then you're gonna start changing the pain without any need for physical treatment. Necessarily. But it's just giving them that confidence again. Duncan

Of note in relation to this theme and related toolkit component was that osteopaths spent little time discussing Point PP4. This component related to feelings of isolation caused by the experience of PRLP (Study 1) and how this was navigated within the TA of OC (Study 2). This component of the toolkit did not feature significantly in the findings from this study however the osteopaths did agree that the role of the partner could provide a mitigating influence on the experience of PR-LP:

How does the husband fit into the picture? Because I think if you've got a supportive husband that's got to make a big difference. Harold

Definitely. Anna

so yeah, just another aspect to the sort of psychological side. If you're getting good support, I think if you're a single mother, it could be very difficult. Harold

Relevant to the theme of Patients' Perspectives, the osteopaths in this study also expressed that the emotional impact of PR-LP should be considered. This emerged in the exchange between Anna and Duncan (below). Duncan's perspective is that there was an inherent vulnerability in pregnancy that led him to be more careful and approach PR-LP patients with "kid gloves". He highlights this in a general sense which could imply both the physical and emotional changes that pregnancy may bring. However, Anna, takes a different view, which she details is focused on providing strength and confidence to women who may be less happy about being treated as a "breakable thing". We see her highlight the need to support the emotional resilience of women who are suffering from PR-LP and in doing so her intention is to support the continuation of normal life. These findings align with the toolkit components which promote the continued (through modification of) activity of ADLs (Study 2 Theme 3, Code 16), communication and reassurance (CR1), the fostering of agency (CR 5) as well as a connection to the baby (Study 2: Theme 2, Code 10). Anna in this example above, is attuned to the emotional impact of the PR-LP experience and how this guides management (toolkit component PP5). This was one of the few examples in the dataset from this study (Study3) where emotions were frankly described in this way. However, the osteopaths situated their understandings from first-person perspectives of how they thought the women in their care would feel due to PR-LP. The similarity of this and the findings from Study 2 indicate an agreement with this component of the toolkit.

I think I treat most pregnant women with kid gloves anyway. You know the I think you actually always (going) to be more protective of people with who are pregnant than you would otherwise. I think it's a basic human thing, isn't it, to do that? Duncan

and you have to be aware, because some of them are emotionally a bit more fragile, and they're scared, and they want you to take it more carefully. But there's also those that don't want it. And I think the emotional impact of that. If you are treating them as this breakable thing is not going to help them a lot if they don't want that. and they're getting that everywhere, and they're partners saying, Oh, don't do all the stuff, and the mom is going. Oh, don't do this stuff and at work, or just drop all of this, and you become less and less of a person, and you just become someone who's carrying a child, whereas I think it's important to give them strength and support that part of the emotion. So give them confidence in their body again. Anna

8.5.2.5 Theme 5: Osteopathic Identity

Understandings of osteopathic identity were frequently affirmed in this study. This was characterised generally by an understanding that OC had within it, components of care which were unique or different from both other professions which practised physical medicine and general medical care.

This finding was consistent across Study2 and Study 3 leading to a high level of agreement as to the nature of OC in PR-LP. Similar to the osteopaths in Study2, the osteopaths in this study (Study 3) affirmed a relationship with the Primacy of Touch (Study2 Theme 5, Code 24) and dialogue with body tissues (Study2 Theme 5 Code 25). Both the themes and guidance points from the below component of the toolkit Osteopathic Identity (Fig 8.6) are discussed in relation to relative agreement or disagreement that the osteopaths had.

Figure 8.6 Clinical Toolkit Section 5

Osteopathic Identity (OI)
OI1: Use palpation and therapeutic touch to comfort the patient
OI2: Consider how palpation and therapeutic touch may act as a vehicle to deliver and strengthen both affective (comforting) and cognitive (educational) reassurance.
OI3: Consider sharing your experience of palpation as tissue changes with the patient, do they perceive this in tandem with you?
OI4: Reflect on your therapeutic intention as you palpate and treat your patient's tissues, does this impact therapeutic outcome?
OI5: Reflect on the broader psychological and physiological changes that may be impacted by osteopathic care.

The osteopaths strongly affirmed this relationship with the importance of therapeutic touch. Interestingly, the osteopaths also expressed that they engaged in dialogue with the tissues of the body. Below, Duncan describes a dialogue with the change in the body that he perceives when treating patients. Of note is how this dialogue seems to be shared between what the patient feels and what he feels during treatment. This is interesting in that it aligns with perceptions of an unspoken and harder-to-define, touch-related interplay between patient and practitioner which emerged in Study 2.

I would absolutely agree with that. To some, you know, touch is an incredibly powerful tool, and also osteopaths use it generally very well, and I think you know we when we, when we

treat our patients, there is very much a dialogue, you know, between the tissues and what they, the patient, is experiencing at the same time. You know it's we this is, you know, very much a backwards and forwards, you know, in involved with that. And you know, as they feel, the change is happening within the touch, I think it's quite important. Duncan

Harold, (below) uses the example of working with putty to describe the changing nature of the body tissues as he perceives it. His comparison to masseurs who implicitly do not do this and as he posits, "squeeze too hard" further underline a perceived separation between OC and other manual therapists. The gradual, gentle dialogue that he perceives appears integral to developing trust in the TA of OC in PR-LP. Duncan and Harold's statements here are typical of much of the talk which centred in OC and represent agreement with points OI1-3 of the toolkit.

When you start off you start off like a piece of cold putty. So, if you got a piece of cold putty in the morning, you squeeze it too hard, it just crumbles. But if you gradually knead it and warm it, and need it and warm it, it becomes soft, pliable, and then you can use it. And there's masseurs like that. You've got to be gentle to start with, and as required you can. You know you can add force. Harold

Abella (below), illustrates further the concept of an interplay between patient and practitioner during the touch-based aspects of OC. She describes what could be a form of positive reinforcement of change that both she and the patient feel at the same time. The context of this change that both patient and practitioner are feeling has been described in the findings of Study 2 (Jeffrey and Joe in 6.6.2.3) and is reported to occur as the osteopath communicates, reassures, and advises the patient. This contemporaneous interplay of physical contact and communication and reassurance is consistently described by osteopaths in Study 2 and Study3 which provides insight into the nature of OC in PR-LP. Additionally, these findings from this study indicate agreement with points OI1-3 of the toolkit.

I feel like if you don't poke what it hurts. They feel like you're not doing much. And I think what makes the touch so powerful as well after we've not only figured out where it hurts the patients, but also after the treatment, they actually feel a physical difference at that moment, which I feel like already starts that healing process. So the patient is thinking, yeah, this is

definitely doing something. I will be getting better. And yeah, I think feeling something changing in their body has a positive impact on their outcome. Abella

Okay, do you think, do you think that? How do you think that relates to the to the development of a clinical toolkit? Or is it just inherent that we all do that? I

I think it's about expert touch? Because when we're not trained. It's really hard to tell what's under our hands, how the tissues feel, or what might be painful. So because we have been doing it for a long time, and we can feel a difference in things. We can tell where the patient is feeling things. So, the patient feels like they're getting more benefit. So I think training in palpation is definitely helpful. Abella

Above, Abella expands on this point by highlighting the concept of “expert touch”. She makes the distinction to before her training as an osteopath and afterwards. This indicates that osteopathic training has imparted something specific regarding palpation which provides insight as to *when* the patient is feeling things. The implication here of an unspoken dialogue indicates the distinction of OC as she perceives it. This further highlights an osteopathic *untidiness* which represents agreement with Perception of Osteopathic Uniqueness (Study 2 Theme 5, Code 25) and represents agreement with points OI4-5. Similarly, Harold, below asserts a distinctiveness between osteopaths and other healthcare professionals. The context of this is that from his perspective, OC has within it a unique approach to therapeutic touch which is not shared by the doctors and physiotherapists who would be providing front-line care for PR-LP patients.

Doctors tend to have an abysmal sense of palpation. Physiotherapists nowadays very rarely put their hands on people.. So, we're in a quite unique position. When we put our hands on people we usually know how to do it in a gentle and effective way.. I think people do find the experience seeing an osteopath completely different from seeing other medics and body workers, etc. So yes, I think that that's because we have a good sense of palpation. Harold

8.6 Discussion

The data from this study explored via, semi-structured interview, UK osteopaths' (6) views on the applicability of the clinical toolkit (Appendix 21) which was derived from the findings of Study 1 (Lived experience of PR-LP) and Study 2 (TA of OC in PR-LP). The toolkit represented the first of its kind and was derived from qualitative exploration of the lived experience of the impact of OC on PR-LP as well as understandings of how osteopaths established the TA in this condition. Previous use of clinical toolkits in health and social care have been considered to highlight and define a range of evidence-informed disciplines such as nursing (Yamada et al., 2015) and medicine (Darnall & Colloca, 2018). In this third study the development of a Clinical Toolkit (Appendix 21) was drafted to address a lack of evidence on what defined OC in PR-LP. As previously discussed, (Chapter 3, Section 6.2), there is the lack of guidance surrounding osteopathy and this condition. As requirements from evidence informed healthcare become increasingly more important, this was done from both a clinical (Noll, 2015) and advertising- standards (ASA 2022) perspective. Importantly, the Clinical Toolkit (Appendix 21) was developed from data which was derived during Study 2 was from a detailed exploration of the TA of OC in the management of PR-LP. This was representative of practice across the osteopathic profession as it was based on three groups of UK osteopaths of varied experience (Fig 6.2).

The osteopaths in this preliminary validation study (Study 3) were all in full-time osteopathic practice and with some experience of managing PR-LP. None of these individuals had specialist knowledge in PR-LP or related conditions. As such, this preliminary exploration as to the applicability of the clinical toolkit represented a "snapshot" of reliability as to the findings from Study 1 and Study 2 from which the toolkit was derived. Areas of what represented good practice and agreement within the general osteopathic practicing community are discussed below in relation to the suitability of the clinical toolkit and how this may inform practice within osteopathic management of PR-LP.

8.6.1 Theme 1: Autonomous Practice

The osteopaths in this study validated the approach highlighted by the clinical toolkit in several ways. This was evident in how the concepts of regional interdependence (Study 2, Theme 1), and its related toolkit component (AP3), governed the therapeutic approaches within OC and PR-LP. For example, the osteopaths in this study consistently demonstrated that they used a form of integrated biomechanical approach which considered how different parts of the body interacted physically with each other (regional interdependence). This is consistent with conventional osteopathic reasoning which argues that different regions of the body are related in terms of physical and mechanical strain and therefore should be considered in clinical management as a living and moving totality (Bergna et al., 2020), (See Chapter 3, Section 6 for an overview). This biomechanical rationale seemed to be a

significant aspect of how osteopaths made clinical judgements and developed approaches to treatment. This is unsurprising as traditional osteopathic principles highlight this concept as a fundamental and distinguishing quality of OC and the osteopaths in this study made many references back to their undergraduate training (which championed this) and how aspects of traditional osteopathic philosophy were at the heart of their management in PR-LP.

Thomson and MacMillan (2023) argue that osteopathy in the modern healthcare landscape suffers from a range of epistemological issues which lead to the inappropriate application of therapy via traditional principles. The authors posit that a weak theoretical basis for osteopathy and an inherent biomedicalised, practitioner-centred approach leads to problems with person-centred rather than patient-centred approaches to patients' problems. This, they highlight, is characterised by an outdated, technique-focussed application of therapy. This view may be understandable in light of recent interpretations of manual therapy which highlight that being overly focussed with the patients' living anatomy and "structure and function" may lead to reductive reasoning which ignores the patient's lived experience and narrative of illness. However, the osteopaths in this study demonstrated strong levels of agreement with *both* the concept of biomechanical (biomedicalism) and patient-centred concepts, such as how patients under their care could mitigate worry regarding their condition on practical and emotional levels. What is most interesting regarding this is that whilst the osteopaths across Studies 2 and 3 did adhere to traditional concepts in the management of PR-LP, the nature of how this was done was more nuanced than Thomson and Macmillan's (2023) position asserts the nature of OC to be. For example, OC across Studies 2 and 3 appeared to utilise the concept of addressing the patient's experience of PR-LP from a biomedical/biomechanical perspective as a way of perceiving how the women's bodies changed due to their developing pregnancy and how this impacted not just their pain and disability but how they felt about their pain and how this modified their behaviour. This led to therapeutic intentions which underpinned collaborative approaches. Within this, it was indicated that osteopaths, in discussion with their patients, found ways in which both treatment and advice could be adapted to the individualised needs of their pain experience. This was demonstrated by consistent agreement with being adaptable (clinical toolkit component AP4) and communicating positive changes during pregnancy (clinical toolkit component AP5). Additionally, the osteopaths in this study highlighted that their practice was representative of the component (AP3) in reducing worry and fear around pregnancy using biomechanical and regionally interdependent explanations which were specific to the individuals in their care. These findings highlight aspects of OC which previous authors may have overlooked in their assertions that OC. For example, that OC, being based on traditional principles, does not indeed incorporate modern understandings of the BPS model (Smith, 2019) and fails to represent patient centred care (Thomson et al., 2013). These novel findings

seem to indicate that more is occurring than the identification of physical issues and manually directed techniques applied to change them. The data from study 3 demonstrated significant concordance with osteopaths using “osteopathic reasoning”, as an initial framework for the approach to the women’s pain experience but then building on this to understand the nature of PR-LP within a complex and person-centred framework. Previous work has identified that patients attending an outpatient osteopathic service experience reductions in pain and disability within the context of measurable outcomes such as fear avoidance (Westmoreland et al., 2007). And, more recently, a systematic review has indicated that osteopathy may have some effects on anxiety, fear avoidance, quality of life and general health status in populations living with persistent pain (Saracutu et al., 2018). These findings may highlight relevant concepts to previously poorly-understood relationships between OC and its impact on the psychology of the patient.

Further work (Hidalgo et al., 2024) has recently scrutinised the osteopathic principle “structure governs function” in relation to modern osteopathic praxis. (See Fig 3.2). The authors state that this aspect of osteopathic reasoning can lead to diagnostic and communication issues which are characterised by “anatomical possibilism”. This means that because osteopaths frequently reason in terms of the interconnectedness of the body, they may take this conceptually too far and impart messages to their patients that are not helpful and misleading. For example, as osteopath may potentially give explanations about the body, its regional interdependence and what is therapeutically possible, which are not fully empirically supported. Naturally, anything that misleads patients as to the truth of bodily function can undoubtedly be harmful and some work has demonstrated that anatomically based explanations which lack accuracy can be harmful in terms of impacting patients’ understandings around the possibility of recovery as well as influencing pain-related illness behaviour (Hohenschurz-Schmidt et al., 2022; Kashyap et al., 2023; McGrath, 2022).

However, from the results of these three studies a clear link emerges which illustrates PR-LP patients’ experience of receiving OC to be thematically similar with how osteopaths (across groups stratified for clinical experience) establish the TA in OC. This is then confirmed as thematically similar with the group of practicing osteopaths in Study 3. This relationship is complex and, from the data across the three studies, indicates that osteopaths adopt a traditional framework in managing their patients, likely due to the way they are trained at undergraduate level. This framework then is *added* to and combined with individualised aspects which vary depending on the patients’ presentations and needs. The complex nature of OC captured in Study 2, clearly ranged across the groups of osteopathic practitioners. However, whilst general trends across levels of experience, and how this impacted TA were evident, OC seemed to be established in a “messy” and practitioner-dependant way. This may indicate that the professional freedom that osteopaths have is used as a platform for eclecticism which

relates to the individual osteopath's biases, life experience and exposure to variant therapeutic concepts. This finding supports earlier work (Fryer, 2008) which postulates the nature of training and application in OC to be "craft-like".

Naturally, when taken to extremes, "anatomical possibilism" could indeed result in misleading and potentially negative interactions and understandings within the TA. However, given the findings across Study 2 and 3, the reality of what occurs within the osteopathic TA is clearly illustrated to be more nuanced than is assumed by Hidalgo et al. (2024). This research highlights the divide between what is the assumed content of the TA in OC (based on osteopathic principles) and what may actually be occurring in day-to-day praxis in a eclectic, human context. The epistemological criticism therefore, of other researchers (Thomson & Macmillan, 2023; Tyreman, 2013) may then not fully account for the nuanced nature of OC. Interestingly, and potentially in support of this Grace et al. (2016) have previously explored via a GT methodology that Antipodean osteopaths were reported to engage in OC via a "two-stage" process which was concerned with biomedical aspects first, such as screening for pathology, which then moved into further stage of the application of OC via more reflexively applied and varied skills which were specific to the practitioner. This finding is partially consolidated by the findings of Study 2 whereby the osteopaths initiate OC from biomedical and biomedical constructs but then segue into more individualised applications of OC.

The data from this third study also illustrates that front-line osteopathic practitioners use a structural and biomechanical reasoning from the outset of therapy to manage risk and effectively triage their patients. The data across Studies 2 and 3 highlight agreement with the clinical toolkit components related to this (AP1 and AP2) which is then built on by deeper understandings of related fields. For example, the osteopaths in Study 2 used structural ques, which they perceived from both visual examination and palpation (OPFs) of how the women's bodies changed in relation to the developing pregnancy. This was (stated to be) conceptually related to evaluation of risk of medical conditions which could impact both a given mother and the child that she was carrying (Study 2: Theme 2, Code 10). This tendency was seen across Studies 2 and 3 and is unsurprising in the context of the primary care status of osteopathy in the UK. Screening for comorbidities and the collecting of information to formulate diagnoses is contained within the osteopathic standards of practice (GOSC, 2012). Regarding this, interesting aspects of the data across three studies were evident when comparing the women's experience of PRLP with other healthcare professionals such as physiotherapy, midwives and GPs with OC. This seemed rooted in OC offering extensive physical examination which segued "organically" into treatment. This was illustrated by the data as having the feeling of individualised and tailored approaches to care from the outset of therapy. This was strongly affirmed by the osteopaths in Study 2 and reaffirmed by the osteopaths in Study3. This highlighted that OC in PR-LP

was experienced by the women and delivered by the practitioners as something rather different than the experience of NHS appointments in secondary care environments. As discussed in the sections below (8.8.2-8.8.4), this appeared to provide increased time for the development of trust, communication and reassurance and the development of pro-active strategies towards better health behaviours. This finding therefore adds to what is not fully understood in OC and may explain the context of empirical support for the intervention of OC in PR-LP (Franke et al., 2017; Licciardone et al., 2005) as well as relative dissatisfaction of pregnant women with allopathic care (Clare et al., 2006).

8.6.2 Theme 2: Communication and Reassurance

The findings of this study indicated largely consistent agreement with the component parts of the toolkit which were derived from the theme Communication and Reassurance (Study 2). Following on from the previous section's discussion about how OC seemed to be situated within an initial framework of regional interdependence or "structure governing function" the osteopaths again established this concept as an initial framework for communication and reassurance. The nature of this was not solely concerned with the biomechanical considerations of the living body. Rather, the osteopaths across Studies 2 and 3 used this overarching concept to begin discussions around explaining what was wrong with their PR-LP patients from an osteopathic perspective. This then led to OC being concerned with establishing understandings of the nature of PR-LP and what was causing the patients symptoms (Study 2 Theme 6.3 Theme 1, Autonomous Practice, Page 4, Study 2: 6.4 Theme 3, Communication and Reassurance, Page 9, Study 2: 6.5 Theme 3, The Osteopath as Educator, page 21). The osteopaths in this third Study reaffirmed this relationship by providing advice on how the women in their care could re-engage with ADLs (Abella in 8.5.1) and highlighting patient-specific risk factors and issues which may present challenges in the face of PR-LP (Harold in 8.5.2.1). This approach represented agreement across studies, of the toolkit component CR4. And further illustrated the role of osteopathic (biomechanical) reasoning as an initial platform for touch-based communication, reassurance, and advice.

The concept of treatment time, the Idea that OC offered more time with PR-LP patients was consistent across the data sets of Studies 2 and 3. This was also seen to be evident in the Findings from Study 1 (Catherine). This aspect of OC was therefore also consistent with the lived experience of women undergoing OC for the management of PR-LP in Study 1. Although treatment times vary, given the responses in Studies 2 and 3, osteopaths generally provided their patients with 45 minutes to one hour of interaction. The osteopaths across Studies 2 and 3 consistently asserted that this was a defining characteristic of OC compared to other healthcare professionals. Arguably, the results of these small studies may not be completely representative of the treatment time of all osteopaths, but

it is generally accepted within osteopathic training and regulation that osteopathic appointments last from 30 minutes to 1 hour (GOSC, 2012). This is interesting as by contrast NHS GP and physiotherapist appointments are significantly shorter at 5-20 minutes (Ogden et al., 2004). This therefore may indicate that OC offers PR-LP sufferers more time to feel at ease, feel listened to and experience individualised care. This additional time may allow for them to develop trusting relationships with their osteopaths. Trust (Study 2: Theme 2, Code 6) between patient and practitioner was seen across Studies 2 and 3 as a defining feature of OC which stemmed from the additional time that osteopaths felt they were able to provide and featured in the initial study which explored PR-LP and the impact of OC, from the women's lived experience.

The concept of time and trust interacted significantly with osteopaths' beliefs around the communication and reassurance which was essential to good clinical management. Of note here is that the osteopaths lacked a more formalised understanding of the differences between affective and cognitive reassurance. As such the osteopaths across Studies 2 and 3 seemed to blend these two established forms of reassurance and lacked awareness of research which suggests that this may lead to reduced efficacy of reassurance generally (Coia & Morley, 1998; Pincus et al., 2013). However, Study 2 and 3 do highlight that osteopaths did deliver this "blended" form of reassurance in perhaps different therapeutic contexts on which previous authors have based these concepts. For example, little is known about how the amount of clinical time in which reassurance is provided may impact both trust and the acceptance and efficacy of reassurance. The findings across all three studies of this project raise the question of whether PR-LP sufferers are impacted by this blended approach in a way which differs from standard allopathic care. A further question raised by this is what the effect is of providing communication and reassurance in tandem with therapeutic touch. Several excerpts (Linda & Joe in 6.6.5.1 and Duncan in 8.5.2.2) highlight this as a distinctive feature of OC and a relevant factor in how they managed PR-LP.

Recent work from the field of phenomenology may provide an understanding of what is occurring in OC in this manner. Stillwell and Harman (2019) advance the theory of enactive pain as a way of understanding the human pain experience outwith of conventional BPS understandings. The authors suggest that the limitations in the BPS model are evident in a lack of dynamic integration of the component parts of this model (biological, psychological and social). This, from Stillwell and Harman's (2019) perspective means that the proposed shared aspects of each part of the BPS are not optimally applied in clinical settings due to a lack of nuance which captures first-person pain experiences. This is interesting as the BPS model has over the last 30 years been championed as an "ideal" concept which should be further integrated into manual therapies, such as osteopathy to prevent reductive, and technique-based management (Thomson and Macmillan., 2023). Similar criticism of the BPS, De

Haan (2021) proposes, is that the model lacks a more complete integration of the three components and acknowledgement of the phenomenology of experience. Specifically, in regard to communication and reassurance. Yet further criticism, Bartz (1999) posits, is that the BPS conflicts with patient-centred communication and care even when a clinician has a good understanding of the model itself.

According to Stilwell and Harman, (2019) the BPS is inadequate due to the boundaries between the biological, psychological, and social being artificial, and that the model may therefore be fragmented in clinical scenarios and has a limited theoretical foundation, resulting in the perpetuation of dualistic and reductionist beliefs. As a way of addressing these proposed shortcomings of the BPS Stilwell and Harman (2019) propose the enactivist approach which conceptualizes pain as a five “E” process, arguing that it is: “Embodied, Embedded, Enacted, Emotive, and Extended”. Of relevance to the pain experience this highlights that pain is an important factor in human survival mechanisms and impacts the lived experience of patients from a range of concepts central to the phenomenology of experience.

In support of this and specific to embodied frameworks of care Esteves et al. (2022) propose a model of active interference which draws on advances in neuroscience to illustrate how human behaviour is based on inferences about sensory inputs, cognitions, beliefs and prior experiences of engagement with the world that they live in. Active interference is a key neuroscience concept in models of predictive coding; how the brain processes expectations and how this relates to complex cognitive understandings of the mind. Given the multi-dimensional way and in-tandem touch and communication that osteopaths appear to perform clinically, this proposes an enactive-ecological model which goes beyond the BPS to understand how the complexities of pain’s lived experience may be impacted by OC. (Esteves et al., 2022).

The osteopaths in this study appeared to use biomechanical constructs and anatomical reasoning at the outset of therapeutically engaging with the women in their care. This framework is considered over-used, inappropriate and reductive by a number of authors (Hidalgo et al., 2023; Thomson & MacMillan, 2023; Tyreman, 2013). However, from the content of the transcripts the osteopaths rapidly seemed to display more nuanced approaches to care which were characterised by how the women felt within their own body (Anna: Chapter 8, Page 21) and how this impacted their role as parents or spouses (Anna: Chapter 8, Page 3 Harold: Chapter 8, Page 20). These findings aligned significantly with several similar excerpts from both the women in Study 1 and the Osteopaths in Study 2, which also focussed on how they would manage their pain in the broader social context (e.g. Ava Chapter 2). This may indicate that OC represents a complex and individually centred (both from the perspective of the osteopath and the recipient of care) intervention which addresses the problem of PR-LP in a unique manner.

Strengthening agency to empower the women in their care featured significantly in the findings of this study (Study 3). This was consistent with the findings of Studies 1 and 2, whereby the osteopaths highlighted the importance of this practice and, as such, formed the basis of the toolkit component CR5. This concept seemed to interact strongly with the amount of treatment time osteopaths felt that they provided (CR2) and allowed for the establishment of empathy, compassion, and trust during therapy. Empowerment as a concept has since the 1960s developed within society and has impacted the healthcare landscape for the last 3 decades. Policy changes within organisations such as the World Health organisation (WHO) have produced guidelines that emphasise that the patient voice should be heard (WHO, 2010). These changes are considered to be essential in patients' having the ability to control their own lives and have increased participation in health care and pro-active health care behaviours (Pulvirenti et al., 2014). Specific to pregnancy care Kabeer. (2001) considers empowerment to be comprised of three main areas: (1) an ability to exercise choice among a series of alternatives, (2) agency to define and achieve goals, and (3) autonomy to utilise resources and agency without structural or social constraints. The osteopaths in Study 2 asserted that concepts aligned to this formed a significant part of OC in PR-LP. To this end, the osteopaths in this study (Study 3) reaffirmed a relationship with this toolkit component and prioritised empowerment and the restoration of agency in PR-LP. What is interesting about this finding is that it may further uncover detail which contradicts previously held assertions that OC does not encapsulate appropriate consideration of the BPS model or patient centred care (PCC) (Moran, 2013). That said however, if indeed UK OC in PR-LP is characterised by nuanced practice which prioritises patient empowerment, these findings may highlight the need for more specific structured training at undergraduate level, in order to optimise psychologically informed aspects of OC.

The concept of using nocebic language, which was rooted in terms related to alignment, featured in this section of the toolkit. This had formed a component of the toolkit (CR3) due to the osteopaths in Study 2 stressing the importance of using non-threatening language in their management of PR-LP. The importance of this is of recent interest to both psychologically informed practice and optimal management. As discussed, this practice within the culture of manual therapy can increase perceived threat and reduce proactive health behaviours in patients suffering from persistent pain (Setchell et al., 2017). This was addressed in part during this third study. However, some disagreement of the importance of this prevailed and the concept was somewhat brushed aside by the group. One osteopath (Duncan) doubted the relevance of this concept to PR-LP whereas another osteopath (Anna) agreed that non-threatening language was important. One key factor which may be relevant here is that the differences in when these osteopaths trained. Duncan in this case, is an osteopath who has

been qualified for decades whereas Anna is a relatively newly qualified osteopath. This is consistent with the findings of Study 2 whereby newly qualified osteopaths seemed more conversant with some aspects of psychologically informed practice and reflection. This finding may highlight a need for more evidence informed use of terminology during communication in PR-LP amongst osteopaths who were less exposed to these concepts during undergraduate training.

The osteopaths in this study did not consider the impact that isolation had on the women in their care. This is important as this facet of the complete data set was present in Study 1 and Study 2 and as such formed component C6 of the toolkit. This concept was prompted and specifically enquired about by the researcher however it did not feature in how the osteopaths in Study 3 made sense of the TA in their management of PR-LP. As previously discussed, isolation features as a component of mental defeat (Tang et al., 2007) and may lead to significant consequences for the psychological health of expectant mothers in which PR-LP has been demonstrated to be linked to depressive symptomology at this time (Olsson et al., 2012; Setse et al., 2009). Future research should therefore highlight the importance of this to osteopaths who are involved in the management of PRLP.

8.6.3 Theme 3: The Osteopath as Educator

The findings of this study indicated consistent agreement with the clinical toolkit components of this section. The osteopaths in this study frequently affirmed a relationship with patient education in PR-LP which was centred around offering explanations which encompassed broad aspects of how the women experienced their pain. Several excerpts illustrated how the osteopaths put patients' understandings of their condition at the forefront of management (Abella and Duncan in 8.5.2.3). This was consistent with the findings from the women in Study 1 (Chapter 5, Section 5.4) and the osteopaths in Study 2 (Chapter 6, Section 6.3). This indicated that offering explanations and patient education was a distinct feature of OC in the management of PL-LP, and aligned with the toolkit components OE1-4.

This is an important finding when trying to understand how osteopaths make sense of the TA in PR-LP and how applicable the developed clinical toolkit is for osteopathic practice. It is well established that persistent pain has complexities with its management and that patient cognitions and emotions influence this (Vase et al., 2014). For example, the FA model (Waddell, 1993) highlights that a lack of ability to be psychologically resilient to perceived threat of illness or pain is associated with decreased functional capacity and subsequent poorer outcomes in pain management (Vlaeyen & Linton, 2012). In addition to this the BPS model supports the concept that poorer outcomes result from increased psychological distress during the lived experience of pain (Shaw et al., 2016). Patient's understandings of their pain are considered to be important in providing them with cognitive platforms which reduce the threat value of their pain experience and allow them to engage with

proactive health behaviours which strengthen their resolve to cope and re-engage in healthy movement which improves mood and reduces disability (Vase et al., 2014)

The osteopaths in this study reaffirmed a relationship by initiating this process through the act of active listening. Active listening is a patient-centred interview skill (Rimondini et al., 2006) that comprises different elements of instrumental and affective significance. The skill is a way of gaining information via the use of open questions, summaries, and clarifications. It is also a demonstration of acknowledgement of the patient's own lived experience of illness. The act of listening also is thought to show that there is something to listen to, i.e. that the patient has the opportunity to talk and express himself. Active listening, therefore, incorporates verbal as well as non-verbal facilitation of patient talk (Robertson, 2005). Furthermore, the concept of being able to disclose negative emotions in the therapeutic setting has been shown to address issues of emotional avoidance as is linked to improved health outcomes (Lumley et al., 2012). That OC in PR-LP appeared to be characterised by this is supported by the PR-LP patients in Study 1 feeling "listened to" and the assertions across Studies 1, 2 and 3 that this was a component of care. These findings demonstrate alignment and consistency with the clinical toolkit component OE2.

Within this section of the clinical toolkit the osteopaths in this study affirmed a relationship with normalising pregnancy and pregnancy related pain. This was evident from several excerpts which highlighted that the osteopaths considered this to be an essential part of OC which reduced worry and fear around pregnancy. (Duncan and Anna in 8.5.2.2). This finding aligned with the underpinning discourse where women's lived experience of receiving OC for PR-LP reduced worry and put them at ease (Chapter 5, Section 5.5) This was also consistent with the excerpts from Study 2 which highlighted that osteopaths, across a range of levels of experience, also prioritised this (Rolanda and Jeffrey in 6.6.3). These findings therefore demonstrated agreement with clinical toolkit component OE3.

The medicalisation of birth and pregnancy (Chapter 6, Section 7.4.3) can lead to women feeling increased psychological distress at this time. The osteopaths in Study 2 considered that the women in their care were "processed" by "the system" (Francis in 6.6.2.1) and that OC caused them to feel that pregnancy was more threatening than it really was. The osteopaths in Study 2 therefore prioritised "Normalising Pregnancy" (Study 2: Theme 3, Code 12), conceptually to soothe, reassure and establish re-engagement with ADLS. Similarly, the osteopaths in Study 3 considered that normalising pregnancy should be a component of OC in PR-LP. This was asserted for the similar reasons within the concept of reducing psychological distress (Harold in 8.5.2.3). Whilst medicalisation around pregnancy has been shown to exacerbate psychological distress (Fox & Worts, 1999) it should be considered that the *de-medicalisation* of birth and pregnancy is far from ideal, given the many situations whereby medical

care is essential to saving the life of both mother and baby. It is unclear from the findings of this study how the osteopaths considered this. No collective or individual viewpoint could be ascertained from the data. However, the osteopaths did generally appear supportive of their patients through birth. That said, whilst this may represent a positive component of OC, little is understood around the uniformity of training of osteopaths in relation to pregnancy care and as such this finding highlights an area of potential research and development for the osteopathic profession.

Across Study 1 and 2 the lived experience of women showed that OC during PR-LP acted to help contextualise and, in some cases, interpret the advice that had been provided by other healthcare professionals such as physiotherapists. The Osteopaths in Study 2 frequently reaffirmed a relationship with this practice, which they considered to be a significant component of OC during pregnancy (Rolanda, Cerys and Jeffrey in 6.6.3.4). These findings contributed to the development of the Theme Reframing the advice of others (Study 2: Theme 3, Code 13) and the clinical toolkit component OE4. This concept overall seemed to relate to the idea that the osteopaths spent significant amounts of time with their patients and perceived that they themselves were empathic to the women's narratives of pain. It is understandable that PR-LP patients may find this facet of care helpful in managing their pain as fuller understandings of pain and disability have been shown to reduce pain related fear and anxiety (Pincus et al. 2013) Further support for OC mediating this relationship between pain and related cognitions is supported by (Westmoreland et al., 2007), who demonstrated reductions in pain-related psychological distress with patients attending an osteopathic outpatient service for LBP however what qualitatively comprised OC in this case was not specified. The findings of this study may in part explain this as the osteopaths through a dynamic process of active listening, and relatively long treatment times were able to offer platforms for explaining healthcare advice which was previously not fully understood in shorter clinical encounters. This is supported by previous work which highlights that positive improvements in patients' perceived sense of self may be obtained in relation to positive interactions with health care providers which address a lack of medical knowledge and loss of control the patient's body which can contribute to feelings of powerlessness in persistent pain. This represents further understandings of the role of OC as a mediating factor within the loss of agency and self-enmeshment that accompanies the persistent pain state (Sutherland & Morley, 2008). However, whilst treatment time and active listening may impact this, within OC the role of contemporaneous touch, alongside these variable components of OC warrants further discussion regarding how this impacts the therapeutic context (See Section 5: Osteopathic Identity).

However, it is important to not assume that what the osteopaths say they do is always representative of practice. Difficulties with patients understanding what is happening in their persistent pain may arise due to differences between patients' and practitioners' explanatory models of illness and

treatment (Norby, 2008) And the excerpts in Study 2 may be subject to observer bias in that the osteopaths are only reporting successful interactions which are specific to their own experience. Hence this finding highlights the need for further research to understand how larger populations osteopathic patients, particularly those suffering from PR-LP experience and evaluate this component of OC.

The clinical toolkit component OE5 which related to Study 2: Theme3, Code 16 (Modify Activity) obtained general agreement throughout Study 3. The osteopaths in Study 2 reported that this was a feature of adapting the women's situation to continue with ADLs and healthy movement. This is of relevance to pregnancy as maintaining exercise levels is associated with better perinatal outcomes (Melzer et al., 2010) as well as functional capacity and pain levels generally (Crombez et al., 2012).

8.6.4 Theme 4: Patients Perspectives

The osteopaths in this study had variable agreement with this section of the clinical toolkit. Some key aspects of the findings from Studies 1 and 2 which formed the basis for Patients' Perspectives were addressed, whereas others were not. For example, the clinical toolkit component PP1: Reflect on the limitations and capabilities of osteopathic care in PR-LP was incompletely addressed. The data from Study 2 particularly considered how OC would ideally be reflective of what the limitations and scope of osteopathic practice were in the management of PR-LP. The excerpts from Study 3, demonstrated less consideration of this and when prompted was concerned with areas of care such as drug regimens, which were outwith the purview of OC generally. This has potential implications for OC in PR-LP as a less than precise view on the scope of OC in osteopathic practice could transgress guidelines set out by associations such as the GOsC and ASA. Currently the ASA stipulates that Osteopaths may claim to treat general populations such as pregnant women, babies, and children however, these claims, regarding pregnancy are general and include statements such as "A woman's body changes during pregnancy. Those changes include the softening of ligaments, weight increase and changes to posture. That can lead to additional pressure on joints in various parts of the body, including the spine or pelvis" (ASA, 2022). Should practitioners make specific reference to being able to treat pregnant women, for pregnant-specific conditions, then this puts UK osteopaths at risk of making inappropriate claims. This is particularly important in the context of both the scope of (non-medical) osteopathic practice being discussed on a national level (Plunkett et al., 2022) and the significant amount of pregnant women who seek CAM and allied health for pregnancy related issues (Frawley, 2015).

The osteopaths in this study did however consider the lived experience of the women in their care and how this impacted their day-to-day life. This aligned with the findings of Studies 1 and 2 in that the osteopaths seemed to situate themselves within the lived experience of their patients and how they imagined they would feel with their PR-LP. Several excerpts in this third study highlighted that the osteopaths also considered their patients' perspective with regard to pain levels and functional

capacity and the broader social (family) consequences of PR-LP (Harold and Anna in 8.5.2.4). The osteopaths articulated this consideration of their patients' perspectives as being "patient-centred". This was supported by multiple excerpts across Studies 2 and 3.

Patient-centred care (PCC) requires that the caregiver holistically takes into account what is known about the patient and understands that the patient is a unique human being before forming a diagnosis of the patient's illness (Balint, 1969). The WHO, in 1997 advocated that patients participate in their healthcare (Bissell et al., 2004). From this, PCC has been regarded as good practice for healthcare authorities across the globe. Stewart. (2001) describes patient-centred care as care that (1) explores the patients' reason for the visit and concerns, (2) seeks a holistic understanding of the patients' world, (3) finds common ground about the problem in question and agrees on management, (4) enhances prevention and health promotion, and (5) enhances a continuing relationship between the patient and the health care professional. Arguably, the osteopaths in this study asserted that OC was characterised by this. Across Study 2 and 3 there is significant and consistent agreement with this concept as a defining aspect of OC in PR-LP. This therefore aligned with the clinical toolkit component PP2: "Consider the patients lived experience of PR-LP and how this impacts their thoughts about their health, their pregnancy and coping with day-to-day life." Key aspects of this were how osteopaths used increased treatment time and considered their patients holistically as individuals. This led to the osteopaths asserting that OC in PR-LP was tailored to the individual needs of each patient and as such significant crossover of the themes Empowerment and Time and Trust were represented by the data across Studies 1-3. The osteopaths in this study also asserted that OC took into consideration the impact that PR-LP had on their patients' roles as a parent and spouse (Anna in 8.5.1). This represented thematic consistency from Study 1 where the PR-LP sufferers were concerned with PR-LP making impacting their lives as a parent or spouse. In Study 2 a similar consistency was revealed by the data where osteopaths considered this from the women's perspective (Sunny in 6.6.4.5). Study 3 also had general agreement with this concept as the osteopaths situated themselves within the perspective of the women in their care and how this was impacted by social and family relationships (Duncan in 8.5.2.4). This represented agreement with the clinical toolkit component PP3: "Reflect on how the patient's role and identity as a spouse, parent or woman in general may be impacted by PR-LP". These findings are interesting in the light of recent work which takes a critical view on the nature of OC in general. Thomson and Macmillan (2023) take the position that osteopathy is inherently practitioner-centred, relying on technique focussed approaches and the biomedicalism of treating the physical body. Previous work (Tyreman, 2013) had also called for a critical assessment of how OC *was* inherently indistinctive from other disciplines as its underpinning principles lacked clarity with regard to how they could be applied to clinical care. The findings across Studies 1-3 however, indicate that

the nature of OC and its TA in PR-LP is more nuanced and distinctive than these authors consider it to be. This linked to historical osteopathic principles and practices considering the patient as a dynamic interaction of the body, mind, and spirit and incorporating the body's self-healing ability into care (Cotton, 2013; Zegarra-Parodi et al., 2021). This seemed to be described by the patients and practitioner across the entire dataset of this doctoral project. This therefore presents a further requirement to explore in more detail the nature of PCC in OC and how distinct aspects of this can be highlighted and improved for the management of PR-LP. Additionally, future RCT based research needs consideration as to how to capture these therapeutic concepts and their impact within OC and specific patient populations (Moran, 2013)

The osteopaths in this third study generally did not give much consideration to the clinical toolkit component PP4: "Reflect on how isolation could be a feature of PR-LP and what strategies may be employed to assist with coping". This was not consistent with the lived experience of the women in Study 1 who reported that this was a feature of PR-LP and that OC reduced these feelings of isolation. This indicates that aspect of OC in PR-LP may require further attention due to the significant consequences that psychological distress can have on psychological wellbeing at this time (Olsson & Nilsson-Wikmar, 2004)

The emotional impact of PR-LP was also considered by the osteopaths in this third study. Following reflection on the toolkit the osteopaths considered how this affected the women. This generally was seen in the way that they considered the way the women in their care were feeling when advising them on proactive health behaviours that strengthened agency (Anna in 8.5.2.4). This broadly aligned to clinical toolkit component PP5 which stated the importance of being open to discussing the emotional impact of PR-LP and be sensitive to how this would guide management. However, most of the talk regarding emotions seemed to view emotional understandings as a tacit component of OC and lacked fuller detail regarding how this could inform training and future practice. For this reason, further research on the emotional impacts of PR-LP may be useful in guiding osteopathic practitioners on how to manage psychological wellbeing at this time.

8.6.5 Theme 5: Osteopathic Identity

The concept of a unique osteopathic identity which influenced the nature of OC was a significant aspect of how the osteopaths in Study 2 established the TA in PR-LP. This led to the creation of themes specific to Osteopathic Identity within the clinical toolkit. The osteopaths in this third study, in a similar way to the osteopaths in Study 2 drew strongly on the osteopathic principles as a manner for how they established their rationale for individualised treatment in PR-LP (Jeffrey in 6.6.2.4). This finding has specific relevance for established debate as to the utility of the osteopathic principles (Cotton, 2013), and whether OC is significantly distinguishable from standard MSK care (Thomson & Macmillan,

2023; Tyreman, 2013). Of the themes which related to osteopathic identity, one of the most significantly agreed upon was that of the importance of palpation and therapeutic touch, the osteopaths in this study considered that osteopathic touch was different and inherently superior to the touch used by other healthcare professionals such as GPs and physiotherapists (Harold in 8.5.2.5). As such, they considered that therapeutic touch within OC was a defining aspect which helped mediate positive changes in wellbeing in the condition of PR-LP. The use of touch in physical medicine has over the last several decades been a source of significant debate with some researchers considering that therapeutic touch is out of date and unhelpful (Moore, 2012). This, has culturally stemmed from understandings that, according to the BPS model, lifestyle factors and psychosocial aspects of a patients' life can present the main impediments to recovery of MSK pain (Vargas-Prada & Coggon, 2015). This trend has resulted in current MSK practice within the NHS, in the main not offering touch-based therapy and prioritising the use of education and exercise-based protocols for MSK conditions such as PR-LP. Therapeutic touch and "technique based" interventions have also recently received criticism, due to being "practitioner-centred" and a call for re-evaluation of this from within the osteopathic profession itself (Thomson & Macmillan; Tyreman, 2013).

This is interesting as a significant body of evidence identifies hands-on modalities as having mechanism of action beyond the structural and biomechanical understandings of manual therapy e.g., change in spinal stiffness (Lunghi et al., 2016). For example, neurophysiological reflexes at the level of the spinal cord, opioid-pathway interactions with spinal manipulation and CEs have been implicated in how patients' nervous systems may respond to hands-on treatment (Bialosky et al., 2018; Rossetini et al., 2018). Arguably and irrespective of interprofessional debate, UK osteopathy still is characterised as using therapeutic touch and physical manipulation (Van Dun, 2023). This is echoed within the data sets of this project as the use of therapeutic touch has been highlighted as a beneficial aspect of OC in PR-LP. The osteopaths in Study 2 made many comments that touch in OC worked in a range of ways beyond just the physical treatment of the PR-LP patients' pain. This included the description of a mind-body inter-relatedness within both the cognition of the patients and practitioners. This was focussed on the setting of contextual frameworks which allowed (from the practitioners' perspective) for the optimised delivery of advice, empathy, patient education, and empowerment. In Study 1 the women who received OC reported that this was not just enjoyable but when compared to other forms of clinical touch, e.g. physiotherapy, as it was more gentle and facilitated a rapid relief of symptoms. Naturally, from this small study significant bias could occur, particularly as the women were self-selecting and may have had positive biases towards OC. However, in Study 2 many excerpts across the experiential strata of 3 groups of osteopaths affirmed a relationship with the therapeutic touch within OC as being a significant and decisive factor as to how OC facilitated transition from the state of

persistent pain to relative normality. Although, this was far less prominent within the EC group of osteopaths. This relationship with therapeutic touch was further reaffirmed by the osteopaths in Study 3 who demonstrated consistent agreement with the “uniqueness” of osteopathic touch (Duncan, Abella and Harold in 8.5.2.2). Therefore, the osteopaths’ views in this study were in alignment with the clinical toolkit components OI and OI2. Unlike the osteopaths in Study, the osteopaths in Study 3 did not demonstrate agreement with mystical connections to healing. This construct was present within Study 2 and was captured within the toolkit component OI 3. This indicated that this may not have been such a commonplace aspect of UK OC and may have resulted from the nature of individual responses during the dynamics of group discussion in Study 2. Although, in further support of the osteopaths in Study 3 considered that an essential component of osteopathic uniqueness was touch that augmented the cognitive and affective domains of the therapeutic interaction in OC (Duncan in 8.5.2.2).

As discussed, the underpinning theory as to what is happening during therapeutic touch in OC is divided. Some authors take the view that the therapeutic examination and treatment techniques are passive and as such of lesser value (Jull & Moore, 2012; Thomson & Macmillan, 2023). Whereas others consider that therapeutic touch operates on complex ways which impact the patient in a multidimensional manner. Theoretical positions that may explain this are complex when viewed within the multifactorial aspects of the human pain experience however, some potential explanations may be found in the field of inter-disciplinary research known as embodiment. Theories of embodiment stem from the combined positions of research within the areas of philosophy, psychology, psychiatry and neuroscience (Fuchs & Schlimme, 2009). Broadly, these concepts propose that the human mind stores thoughts and emotions within “embodied simulations” (Veenstra et al., 2016). These relate to external and internal sensory states of being, and related action (such as movement or proprioception) which produce simulations of an individual’s previous self (Kiefer et al., 2012; Niedenthal, 2007). This is therefore proposed as a conceptual way of how thoughts (or pain related cognitions) which relate to sensory states (such as pain) can be stored in the sensorimotor areas of the brain and be re-experienced or re-activated leading to “sensorimotor simulation” (Dijkstra & Zwaan, 2014). Earlier work (Gifford, 1998) proposes a similar yet more simple schema which advances the theory of the “mature organism model”. This model positions the human nervous system as a system which engages in a perceptual “sampling” of its environment and makes appraisals of sensory states (such as pain) and motor states (such as altered proprioception or impaired mobility) in relation to higher centre connectivity which is specific to the individual.

Whilst these conceptual models may lack unequivocal empirical support they may offer some insight into the relatedness of cognitions, emotions and sensory interplay between patient and practitioner,

which was discussed in some depth in Study 2. The osteopaths in Study 2 and Study 3 asserted, that their experience of this was a significant component of OC in the management of PR-LP. During the interviews in Study 2, osteopaths attempted to explain these concepts in ways which were hard to understand. Some excerpts highlighted concepts which were related to perceived mystical connections to healing (Study 2: Theme 5, Code 24) whereas others related more to understandings of interoceptive phenomena and how this related to the emotional state of the patient. Frequent mention was also given, in these contexts, to the “osteopathic triad” or “mind-body-spirit” interplay as a way of sense-making amongst the osteopaths in Study 2. This is undoubtedly challenging to make sense of from a scientific perspective. However, recent work of relevance to OC and touch goes further to provide a rationale for these conceptual relationships. Bohlen et al. (2021) propose a model of osteopathic touch which builds on the concept of embodied cognition and incorporates interception (Chapter 2 PG X) and predictive coding within the brain. They suggest that hands-on OC generates strong interoceptive prediction errors that update the generative state of the brain which underpins the experience of pain and depressive symptoms. More simply, this means that the patient’s nervous system subconsciously anticipates pain as a response to touch and when therapeutic touch is not painful this causes the brain to re-evaluate (and reduce) the symptoms of depression and psychological distress which have been associated with pain. Within this context of the phenomenological and thematic findings across Studies 1-3, more can be considered to be at play in the TA of OC within the management of PR-LP. For example, the women in Study 1 reported rapid relief from osteopathic treatment which they reported as being enjoyable, the osteopaths in Study 2 asserted a perceived dialogue with the body tissues (Theme 2, Study 2) and the primacy of touch (Theme 1, Study 2). Additionally, the osteopaths in this study reaffirmed (from the findings of Study 2) that touch within OC underpinned reassurance and the establishment of collaborative dialogues which strengthened the coping in the women in their care (Jeffrey in 6.6.2.1) This represented agreement with clinical toolkit OI3 “Consider sharing your experience of palpation as tissue changes with the patient, do they perceive this in tandem with you?” and OI5 “Reflect on the broader psychological and physiological changes that may be impacted by osteopathic care”.

In support of a more nuanced consideration of therapeutic touch in manual therapy, Thornquist (2022) states that touch is not as simplistic, or passive as considered by previous criticism. This is thought to be due to the specific interplay between patient and therapist which occurs during the dialogue of talk and touch. This induces active responses, such as breathing and movement and allows patients to change dysfunctional cognitions and habits in relation to their pain, as they begin to trust their body more under the influence of the combined and continuous dialogue of touch and supportive talk. This is further supported by the body of work which highlights that affective touch plays a crucial role in

facilitating understanding and regulation of psychophysical function which forms a robust TA between practitioner and patient (McParlin et al., 2022). This relationship is illustrated by the findings of Study 2 which highlighted that the osteopaths gave much consideration to the meaning of OC's touch in the lived experience of the women in their care (Theme 5). That said, the osteopaths in Study 3 considered this less broadly which indicated less agreement with clinical toolkit component CR4 "Reflect on your therapeutic intention as you palpate and treat your patient's tissues, does this impact therapeutic outcome?".

8.7 Study 3 Limitations

In a similar manner to Study 2 This study used a focus group format for data collection. This could potentially have led to similar issues of bias in relation to the personality of the participants and researcher (Smithson, 2000) As this study initially attempted to use thematic analysis, similar issues of reliability in relation to subjectivity and interpretation may have been present.

Initially, the data collection was focussed on strategic implementation of the drafted clinical toolkit (Appendix 21) as a way of considering its relevance to UK osteopathic practice. As discussed, (Sections 6.3.2 & 8.4) the direction of the interview took an unexpected turn whereby participants largely reported what they did from first person perspectives. This may have represented a limitation from the perspective of aligning to the aims of the Study. However, the data which was collected represented a detailed overview of how relevant the participants considered the clinical toolkit in relation to their own practice. Whilst this data was analysed thematically and themes collated and aligned to the data from the previous two studies (Appendix 22), this study (Study 3) became more relevant to a "snapshot" of osteopathic practice and the need for research into osteopathic practice. Whilst this is interesting, due to the small sample size of this study and issues of self-selection (Alarie & Lupien, 2021) (see also Sections 5.7, 6.7 & 8.7) conclusions from these findings may lack generalisability. Attempts to understand this change to the expected nature of data from this study, in the context of the project were made via the reflexive processes outlined in Chapter 2).

Arguably PPIE (Mathieson et al., 2025) could have been used to enhance this third study in the context of developing conclusions and specific meaning from the findings. This could also have mitigated potential osteopathic bias that I had as the researcher (See also Sections 5.7 & 6.7). Previous challenges to recruitment that were presented by the Covid-19 pandemic, had at this stage subsided. However, at this stage of the project I had returned to private practice and was not working within the infrastructure of the Swansea University or the HWBA which meant that this, particularly in the context of slow and time consuming recruitment, was not feasible.

A further potential limitation of this study is that it required participants to reflect on a material at their own pace and under non-standardised conditions. The participants were provided with one week to do this to inform their discussions during the group interview. It is uncertain how long or involved the process of reflection on the material provided was for each individual participant and therefore this may have impacted both participant hesitancy, confidence, and the nature of the excerpts in the interview.

Chapter 9: Discussion and Conclusion

9.1 Introduction

The aims of this project were initially to explore and understand the lived experience of PR-LP and how OC impacted this condition. As discussed in previous chapters, the IPA study at the outset of this doctoral project revealed that PR-LP patients experienced their condition across a range of domains. These broadly consisted of 1) a disruption to the patients' normal lives which was related directly to PR-LP related pain and associated disability, 2) psychological distress associated with PR-LP which impacted mood and emotional states, and 3) negative PR-LP related cognitions which indicated issues of self-enmeshment and reduced resilience. The first study also aimed to understand the impact that OC had on the condition from the patient's perspective. The findings in relation to this highlighted that PR-LP patients experienced OC to be characterised by education and reassurance, which increased coping and reduced negative cognitions related to self-enmeshment and impaired resilience. PR-LP patients also experienced physical impacts of OC which were directly related to treatment being enjoyable, soothing, and ameliorative of reduced mobility.

A second study which explored via thematic analysis, how UK osteopaths established the TA in PR-LP highlighted that components of OC interacted in complex ways to support patients suffering from this condition. Via an iterative, reflexive process of coding, three semi-structured interview transcripts, these components of OC were thematically arranged into five distinct domains. This study therefore highlighted that OC in the management of PR-LP was characterised by 1) the autonomous nature of osteopathic practice, 2) aspects of the TA related to communication and reassurance, 3) the osteopaths providing patient education related to PR-LP, 4) osteopaths reflexively considering the PR-LP experience from the patients' perspective and finally, 5) the concept of osteopathic identity and how this informed the establishment of the TA in PR-LP.

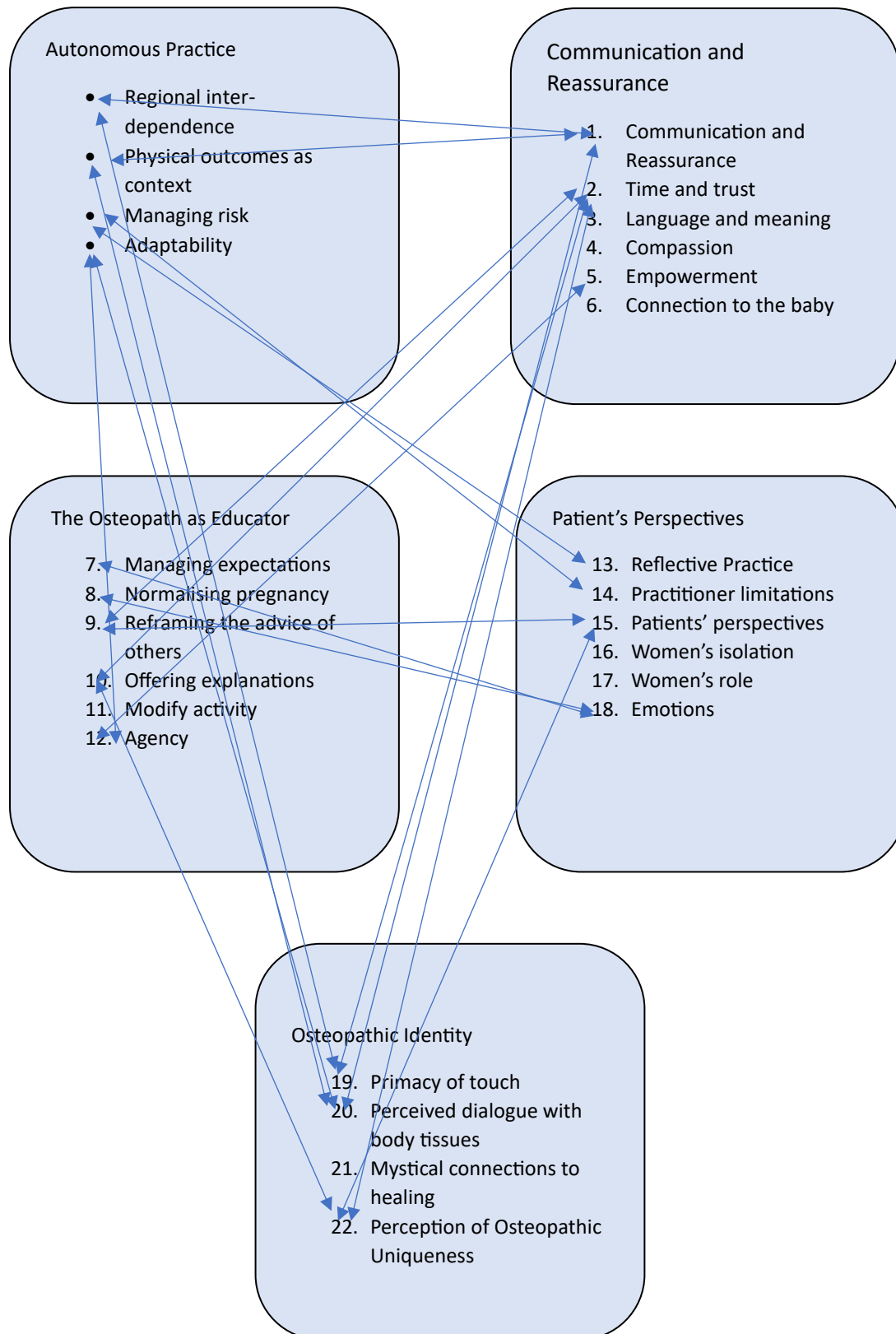
By reflexive synthesis of the findings in the first and second study, a third study aimed to develop a preliminary draft of guidance in the osteopathic management of PR-LP. This guidance was constructed in the form of a clinical toolkit (Appendix 21) which was reviewed via a further semi-structured group interview of UK osteopaths who had experience of managing PR-LP (n=6). A reflexive thematic analysis was attempted on this data set and themes are available in Appendix 22. However, as discussed, the data from this study was less amenable to the construction of new themes to answer the research aims fully. Some of the data were able to be aligned to existing themes from Study 2 however, this was not a predominant characteristic of the data. Instead, the findings of the focus group interview of these osteopaths in Study 3 demonstrated consensus and concordance with the findings of Study 2 in the context of Study 1.

This concluding chapter discusses in detail, the relevance of this project's findings for UK osteopathic practice, education, and research. Additionally, this chapter discusses the limitations of the project and provides recommendations for future research in relation to the findings of the three Studies. Finally, this chapter provides a final reflection which draws on the reflexive journey of the research process throughout the project.

9.2 Interactions and Overlaps of TA components in Study 2

This section discusses key relationships between aspects of how the range of defined domains which characterised the TA of OC in PR-LP showed significant levels of interaction and overlap. This highlighted that the TA in this case, was complex, nuanced and "messy". The result of this was that, whilst the data showed that OC had specific and novel components of the TA in PR-LP, separating these as completely distinct from each other was not possible. This complexity is consistent with interventions involving professional practice (Evans, 2016) and has been demonstrated in research which explores professional practice across a range of disciplines (Beeston & Simons, 1996). Codes derived from the data set were seen to interact with each other both within the same theme and across themes. A summary diagram of this is seen below in Fig 9.1.

Figure 9.1 Overlap and Interaction of Themes and codes in Study 2



9.2.1 Theme 1 Autonomous Practice

The osteopaths in Study 2, at the outset of how they began their clinical reasoning and therapeutic dialogue with their PR-LP patients reported a similar pattern of engagement. These often began with a “traditional” osteopathic perspective which was rooted in the function of the living body and anatomical relationships. This is perhaps unsurprising as osteopaths do concern themselves with the osteopathic principle “Structure and function are reciprocally inter-related”. However, the findings from Study 2 suggest that rather than this mechanistic framework governing therapeutic decisions and subsequent action, this position developed in a more complex manner that considered by current criticism of the “biomedicalism” within osteopathy (Hidalgo et al., 2024; Thomson & Macmillan, 2023). For example, Regional Interdependence (Theme 1, Code 1) was seen to interact significantly with not only other aspects of primary care decision making such as (Physical outcomes as context (Theme 1, Code 2) and Managing Risk (Theme 1, Code 3) but other aspects of care which were less focussed on biomedical or mechanistic constructs. Regional interdependence in this case interacted significantly with Adaptability (Theme 1, Code 4) which was focussed on what osteopaths described as “patient-centred” approaches to care. Adaptability (Theme 1, Code 4) and Regional Interdependence also interacted with Perceived Dialogue with Body Tissues (Theme 5, Code 25) which indicated that the established constructs of meaning that osteopaths derive from osteopathic palpatory findings (OPFs) (Bergna et al., 2022) were both linked to their concept of professional identity and consideration of how their patient’s experienced life through their PR-LP. This was an early indication of a nuanced interaction with osteopathic PI and its mediating role in the establishment of TA in PR-LP (See section 7.5 Osteopathic Identity below).

9.2.2 Theme 2: Communication and Reassurance

The above section (Autonomous Practice) discussed the interaction between how osteopaths’ initial approach to management appeared initially rooted in biomedical/biomechanical constructs. This traditional manual therapeutic approach seemed to rapidly transition into platforms of care which were more nuanced than the sole consideration of anatomical relationships. This continued within the theme of Communication and Reassurance (Study 2, theme 2). Of note here was how the osteopaths considered that their professional identity as osteopaths (Theme 5: Osteopathic Identity) was a deciding factor in how they were able to provide time which established trust (Study 2 Theme 2, Code 6) to develop the TA via communicative and reassuring dialogues which helped their patients recover from PR-LP. Aspects of this relationship were defined within the construct of holism or the concept of the “osteopathic triad” of mind-body-spirit inter-relatedness and further linked to osteopathic identity (See below section 9.5). Frequent assertions to OC being characterised by a combination of interacting codes Compassion (Theme 2, Code 8), Communication (Theme 2, Code 6), and Empowerment (Theme

2, Code 9) in this theme, developed the construct that osteopaths established their TA in a person-specific and tailored manner. As discussed in Chapter 2, which aligned to PCC definitions of: “Respectful and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions” (Baker, 2001) The relationship between (Compassion Theme 2, Code 8), Communication Theme 2, Code 5), and Empowerment Theme 2, Code 9) was also seen to interact with how osteopaths offered their patients explanations (Theme 3, Code 14), recontextualised, or unpacked PR-LP advice from other parties (Theme 3, Code 13) and aimed to establish the return of agency (Theme 3, Code 16). This again had complex interactions with adaptability (Theme 1, Code 4) and the relationship that osteopaths perceived with their PR-LP patients’ bodily tissues through touch (Theme 5, Code 22).

9.2.3 Theme 3: the Osteopath as Educator

How osteopaths provided education to their PR-LP patients was also seen to interact both within codes in this theme and across different themes in the dataset. As the osteopaths attempted to address pain-related illness behaviour e.g. catastrophising, they reported that they commonly managed expectations (Theme 3, Code 11) both within the context of asking the PR-LP patient what they expected to gain from treatment and of Normalising Pregnancy (Theme 3, Code 12). The osteopaths did this in the context of what they considered to be defining aspects of OC such as the time that was provided and its relation to establishing trust (Theme 2, Code 6) and their own professional identity (Theme 5, Code 25). This had specific relevance to the findings of Study 1 whereby patients reported PR-LP related fear and negative cognitions around their pregnancy due to the pain that they experienced. The data from Studies 1 and 2 also indicated that OC was characterised by an empowering of PR-LP patients (Theme 3, Code 9) which interacted significantly with a return to personal agency (Theme 3, Code 16) and addressed what appeared to be issues of self-enmeshment and difficulty with projected “future selves” (Morley et al., 2005; Sutherland & Morley, 2008;) ability to cope with the tasks of life and upcoming birth. This sense of returned agency, that the osteopaths considered to occur with OC was also seen to be related to their ability to be adaptable to their patients’ individual needs (Theme 1, Code 4) This was seen in both the osteopaths’ tendency to describe tailored management strategies and advice on carrying on with life whilst modifying activity (Theme 3, Code 16) based on individual circumstances. Within this theme the concept of re-contextualising advice that their patients had received from other caregivers or family members (Theme 3, Code 13) was also seen to further interact with Compassion (Theme 2, Code 8) Empowerment (Theme 2. Code 9), Agency (Theme 3, Code 16) and the Perception of Osteopathic uniqueness (Theme 5, Code 25).

9.2.4 Theme 4: Patients' Perspectives

The findings from Study 2 indicated that osteopaths engaged in reflective strategies to situate themselves within the lived experience of their PR-LP patients. This was done across a range of aspects of care which demonstrated interaction of codes within this theme and other themes. For example, the osteopaths initially did this within the concept of managing comorbidities which may affect their PR-LP patients (Theme 1, Code 3). This was then developed to consider how their patients were impacted from their own individual experience such as isolation (Theme 4, Code 19) and the emotional impact of PR-LP (Theme 4, Code 21). Further to this, the osteopaths also established their individualised care via consideration of projected aspects of PR-LP which related to their previous experience and tendency to reflect on the patient's narrative. This was seen in how osteopaths considered the impact of constructs such as "pain memories" (Meints & Edwards, 2022; Phelps et al., 2021) and how individual family and social dynamics would impact their patient's experience. This was done in the context of providing "holistic" care which demonstrated multiple interactions with the Themes Perception of osteopathic uniqueness (Theme 5, Code 25), Empowerment (Theme 2, Code 9), Offering Explanations (Theme 3, Code 14) and Managing Expectations (Theme 3, Code 11). These aspects of the TA established by the osteopaths aligned with the findings from Study 1, whereby PR-LP patients felt "listened to" and drew positive benefits from their osteopaths as they worked within a framework of individualised care which seemed to specifically reduce fearful tendencies and SCEs (Turner-Cobb et al., 2015) which allowed the women to return to normal life.

9.2.5 Theme 5: Osteopathic Identity

The findings from Study 2 demonstrate, in relation to this theme that osteopaths established their TA in the management of PR-LP in a manner which was significantly related to their own professional identity (Perception of Osteopathic Uniqueness Theme 5, Code 25). Throughout the dataset many inferences related to how OC was imbued with an "osteopathic way" of caring. This related to the concept of holism and how PR-LP patients should be viewed as a totality of how their "mind, body and spirit" was impacted in an inter-related way. The osteopaths did report how touch and the elements of osteopathic touch were of a special importance (Theme 5, Code 22) that defined OC. A further relationship between codes in this theme and others arose whereby osteopaths in Study 2 asserted that their perceived relationship between body tissues (Theme 5, Code 24) and the way that these changed when they administered osteopathic treatment was also linked to osteopathic identity (Theme 5, Code 23). Osteopaths described a "shared meaning" and language (Theme 2, Code 7) of felt "releases" in the patient's body, between practitioner and patient. This, they viewed in the context of both a compassionate (Theme 2, Code 8) and professionally defining (Theme 5, Code 25) of what OC offered. This phenomenon that the osteopaths described also interacted with codes such as Primacy of Touch (Theme 5, Code 22), Time and Trust (Theme 2, Code 6), Offering Explanations (Theme 3, Code

15 and Patients' Perspectives (Theme 4). These codes were also seen to interact with a range of themes across the dataset such as Perceived Dialogue with Body tissues (Theme 5, Code 22) Offering Explanations (Theme 3, Code 14), Time and Trust (Theme 2, Code 6), Language and Meaning (Theme 2, Code 7), Mystical Connections to healing (Theme 5, Code 25) and Reflective Practice (Theme 4, Code 17). This highlighted that the TA in OC for PR-LP may have been established, in part via a mediating influence of osteopathic PI which had specific meaning to the osteopaths and governed their clinical reasoning and application of therapy. A further interaction in this theme was Mystical connections to Healing (Theme 5, Code 24) which related to ways in which the osteopaths attempted to rationalise the less-understood aspects of how they perceived tactile and sensory phenomena whilst delivering physical treatment as part of OC. This was interesting in that, whilst two of the three groups of osteopaths in Study2 (EXP and AC) identified with this, it was difficult to fully understand what this meant for the relevance of this project.

9.2.6 Levels of Concordance with Clinical Toolkit in Study 3

The third study aimed to explore the validity of the findings of Study 1 and 2 in the context of their feasibility and relevance for osteopathic practice, education, and research. This began with the reflexive development of a clinical toolkit which aimed to capture and illustrate good practice in the osteopathic management of PR-LP. This clinical toolkit was then provided to a focus group of osteopaths one week prior to meeting to discuss the feasibility of implementation to, and relevance of this material to osteopathic practice. As discussed, thematic analysis aided in the construction of new codes which aligned to Study 2's findings. However, the more pertinent findings of this study focused on how the guidance was directly relatable to the clinical practice of the osteopaths who participated in this study. This was documented in terms of relative concordance and derived meaning from the component parts of the clinical toolkit itself.

From the findings of this study the osteopaths demonstrated high levels of agreement with Study 2, Theme 1: Autonomous practice. The Findings of Study 3 highlighted that the osteopaths in this study, in a similar vein to the osteopaths in Study 2 initiated management of their PR-LP patients via biomedical and biomechanical constructs which aligned to autonomous clinical reasoning, risk and triage of what aspects of their patients' presentation should be attended to with most importance. This demonstrated an agreement with clinical toolkit components AP1-2. Similar to the osteopaths in Study 2 the Study 3 osteopaths then reported agreement with transitioning into a more fluid approach which encompassed their individual patient's needs and concerns around psychological distress such as PR-LP and pregnancy-related worry. Interestingly, the osteopaths in this study also described an OC which was initiated within a biomedical/biomechanical framework and progressed to more nuanced

concerns about how their PR-LP patients felt about their pain and what was happening within the therapeutic dialogue in relation to communicating aspects of what was happening during OC. This similarity highlighted the “adaptable” nature of OC and demonstrated concordance with clinical toolkit components AP3-AP5.

From the findings of this study the osteopaths demonstrated mostly high levels of agreement with Study 2, Theme 2: Communication and Reassurance. The osteopaths in Study 3 asserted that giving appropriate time was important to their PR-LP patients to provide sufficient platforms for communication and reassurance that aimed to strengthen the patient’s resolve in the face of PR-LP. This interacted significantly with the concept of empowering PR-LP patients to strengthen their ability to cope and represented agreement with clinical toolkit components CR4-CR5. Interestingly these osteopaths also reported that touch interacted with the giving of communication and reassurance. Furthermore, they did not differentiate or seem to consider the differences between cognitive and affective reassurance and specific issues around these types of reassurance being provided in tandem (Coia & Morley, 1998; Pincus et al., 2013). This reflected the manner in how the osteopaths in Study 2 established the TA and aligned to clinical toolkit components CR1 and CR2.

An area arose in this theme whereby these osteopaths disputed the information in the clinical toolkit. This related to the use of nocebic terminology (Clinical toolkit component CR3). The osteopaths in this study were divided on the use of terms to describe patient’s pain and physical dysfunction which were “positional” in nature, such as “rotated” or “twisted”. As discussed in the Preceding Chapter this may however have been related to the time that the individual osteopaths qualified (see section 9.4: Implications for Education).

From the findings of this study the osteopaths demonstrated high levels of agreement with Study 2, Theme 3: The Osteopath as Educator. The osteopaths in this study reported that they put at the forefront of management patients’ understandings of their PR-LP in order to manage their expectations. This aspect of the TA was reported to be established in the context of using active listening to gain access to the patients’ narrative as well as normalising pregnancy and PR-LP to reduce fearful cognitions which interfered with the return to pain free living. This represented concordance with clinical toolkit components OE1-OE3. This also aligned to findings in Study 1 whereby PR-LP patients felt that their osteopath listened to them and took the time to understand their narratives. The Osteopaths in Study 3 also demonstrated significant agreement, through several excerpts, of establishing that the advice of OHPs was understood and recontextualising this if appropriate. Furthermore, the concept of modifying rather than ceasing activity. These points represented concordance with clinical toolkit components OE4 and OE5 respectively.

From the findings of this study the osteopaths demonstrated a moderate level of agreement with Study 2, Theme 4: Patients' Perspectives. For example, the osteopaths in Study 2 discussed in detail the limitations and scope of OC in PR-LP. Whereas this was briefly mentioned in Study 3 and represented only partial agreement with clinical toolkit component PP1, a further area which was not considered to be relevant to the osteopaths in Study 3 was how PR-LP patients could feel isolated. This represented a lack of concordance with clinical toolkit component PP4. The osteopaths in this study did however consider that the way their PR-LP patients lived experience of PR-LP impacted their thoughts about health pregnancy and their ability to cope, were important in their management. Contextually the osteopaths prioritised this within the concept of being "patient-centred" and this represented concordance with clinical toolkit components PP2 and PP5.

From the findings of this study the osteopaths demonstrated high levels of agreement with Study 2, Theme 5: Osteopathic Identity. Similar to the osteopaths in Study 2, osteopaths in Study 3 consistently highlighted an identification with a "osteopathic uniqueness" which governed clinical decisions and therapeutic intention. This was strongly aligned to using palpation and therapeutic touch to comfort their PR-LP patients and importantly how this also contributed positively to the communication and reassurance between the osteopath and patient. The osteopaths further asserted that touch was a shared phenomenon between both parties in OC which established collaborative strategies, psychological benefits, and the development of trust. This represented agreement with the clinical toolkit components OI1 -5. Of note is that the Osteopaths in Study 2 and 3 both asserted that there was something unique and "special" about touch in OC which was not present in other clinical disciplines.

Overall, Study 3 demonstrated consistent agreement, with the exception of toolkit components which described the use of nocebic terminology (CR3), the limitations of OC (PP1) and PR-LP-related feelings of isolation in patients (PP3). Therefore, the results of Study 3 demonstrated via preliminary validation that the clinical toolkit was representative of the TA of OC in the management of PR-LP

9.2.7 Levels of Concordance with Extant Documentation

The findings of Study 2 and Study 3 show some concordance with current documentation which refers to clinical guidance for UK osteopaths. Namely, the OPS. The OPS are standards of conduct, ethics and competence required of UK osteopaths to ensure high-quality care for patients and are set out by the GOsC (GOsC 2012). As previously discussed, (Section 7.1) the OPS uses four domains to set out key areas of professional standards for osteopaths, much like the clinical toolkit from this study these practice standards are divided into sub-components which provide specific further detail as to how the standards should be applied. Indeed, the format for the Clinical Toolkit (Appendix 21) adopted a "mini-OPS" style in order to provide clarity and relative familiarity to the osteopaths in Study 3. The

four principal domains of the OPS are i) Communication and Patient Partnership, ii) Knowledge Skills and Performance, iii) Safety and Quality in Practice and iv) Professionalism. The items of the Clinical toolkit showed broad concordance with ii) Communication and Patient Partnership in that the formation of effective therapeutic partnerships were a focus of OC. This is perhaps unsurprising as the OPS document, and the theme of communication and patient partnership influenced one of the interview questions in Study 2 (Fig 6.1) this was also reflected in how the osteopaths across Study 2 and Study 3 confirmed and extrapolated the meaning of these constructs to how they established the TA in the management of PR-LP. This can be seen across Study 2 Themes: 5-10 (Communication and Reassurance) as well as Study 2 Themes 11, 13 and 14 (The Osteopath as Educator). Of note is that the Clinical Toolkit (Appendix 21) can also be seen to concord with key components of domain ii) Knowledge, Skills and Performance. For example, the sub-domains of this standard stipulate that UK osteopaths must be able to apply sufficient and appropriate knowledge to support their work as an osteopath as well as work within the limits of their training. This broadly concords with clinical toolkit components (CR1-6). Additionally, the OPS domain ii) further stipulates that osteopaths must keep professional knowledge and skills up to date as well as analyse and reflect upon information to enhance clinical care. This aspect of the OPS did not generally concord with specific components of the Clinical toolkit with the exception perhaps of a sub domain of ii) knowledge Skills and Performance “B4” which stipulates that osteopaths must analyse and reflect upon information to enhance patient care. However, of particular note was that this was a key feature of how osteopaths across Study 2 and Study 3 engaged in reflective practice (Study 2 Theme: 17) considered their limitations (Study 2 Theme 18). This highlighted that the osteopaths in Study 2 and its confirmatory study (Study 3) practiced in a manner which was in line with the OPS (with regard to these areas). Although what is specifically interesting in this regard is the eclectic, diverse and intuitive ways that each osteopath seemed to apply this (discussed in Section 9.2). The items of the Clinical Toolkit did not substantially concord with the last two domains of the OPS (iii) Safety and Quality and Practice, and iv) Professionalism) as these standards of practice are principally focussed on key aspects of record keeping, data handling, health and safety legislation, financial dealings, and similar ethico-legal obligations (GOsC. 2012).

9.3 Potential Mechanisms of Therapeutic Action in OC and PRLP

This project aimed to explore and understand the lived experience of PR-LP and how OC impacted this condition. Previous work (Franke et al., 2014; Franke et al., 2017) had established that osteopathy, through its treatment was able to mediate the relationship between PR-LP and its related disability. However, differences between osteopathic techniques used in RCTs and real-world osteopathic treatments had been postulated as a reason why some studies demonstrated conflicting results as to

the efficacy of this OC in the management of PR-LP. From the data across the three studies which this project comprises, an overarching theory of the therapeutic impact of OC can be extrapolated.

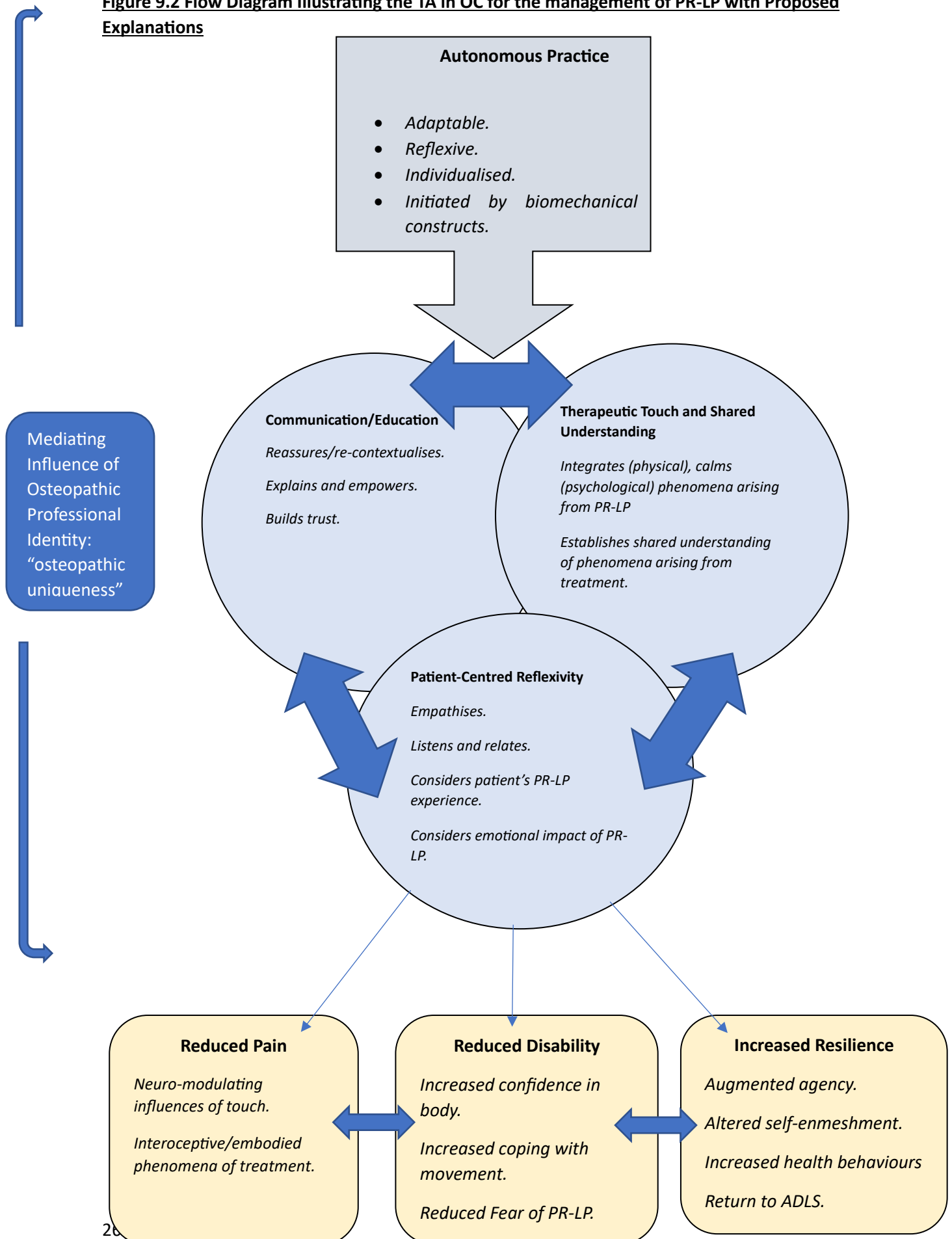
Firstly, areas of contention within mechanistic effects of manual therapy that is used in osteopathy (Chapter 3, Section 6) have been found to lack construct validity. This is seen in that several anatomical “lesions” that are at the heart of conventional osteopathic reasoning and applied techniques have been found to not exist in nature (McGrath, 2013) and be subject to poor inter-examiner reliability (Lederman, 2011). Quite why OC should be able to reduce pain and disability therefore is questionable from a perspective which relates to how osteopaths are conventionally trained. Currently, osteopathic textbooks used in reading lists within OEIs advocate for “positional” forms of palpatory diagnosis and subsequent treatment which do not align to modern understandings of manual medicine (Chila et al., 2011; DeStefano, 2017; Parsons, 2006). More recent work however has shown that manual therapy techniques, as used by osteopaths may reduce pain via neuromodulatory effects which work on the peripheral and central nervous system in a non-specific way which alters how the brain interprets noxious stimuli which results from bodily strain or injury (D'alessandro et al., 2016). This means that the specific techniques within OC may be working to reduce pain in PR-LP patients, even though they are applied via a clinical rationale which lacks reasonable levels of supporting evidence. Further work has recently postulated that the techniques within OC may be affecting positive change in patients via complex neuropsychological activity which alters interception (Cerritelli et al., 2020) and contributes to benefits related to the embodied phenomena of treatment (Bohlen et al., 2021).

Secondly, as the studies across this project demonstrate, the nature of OC is complex and multifactorial. An initial engagement with PR-LP patients from traditional biomedical and biomechanical approaches seems to characterise OC. However, the findings of Studies 2 and 3 illustrate that interviews across groups of UK osteopaths across differing experience and on separate occasions indicate that the relationship is more complex than assumed. This project indicates that the TA in OC for PR-LP appears to be established via a pattern of initial engagement with traditional constructs that transitions into more nuanced and individualised care which is cognisant of pain-related psychological distress. This “nature” of OC is characterised by provision of a combination of cognitive and affective reassurance and patient-centred reflexivity which interacts with therapeutic touch and shared understandings of bodily sensations, in the context of how these related to the lived experience of PR-LP. This in part may explain reductions in pain-related fear which have been demonstrated in real-world OC, albeit in a non-pregnant population of LBP patients (Westmoreland et al., 2007).

Thirdly, understandings of psychologically informed practice from the perspective of the BPS (Engel, 1981) and more recent embodied care (Grace, 2003) models highlight that interventions that

empathise with the patient narrative, demonstrate active listening and address pain related cognitions and SCEs may theoretically increase coping strategies and reduce pain related disability (Diener et al., 2016; Wagner & Ingersoll, 2008). The findings across the three studies of this project appear to support the concept that OC in the management of PR-LP is characterised by elements of PCC which have recently been considered to not align with an osteopathic model of care (Thomson & MacMillan, 2023). From the findings across Study 1-3, OC appears to be functioning to increase patients' confidence in their body and reduce pain related fear. A further aspect of this is that OC in PR-LP appears to affect its patients positively in terms of their ability to cope with future events (Study 1). This finding may relate to concepts centred around the loss of agency in pain and psychological distress (Hellstrom, 2001) which leads to the phenomenon of self-enmeshment (Morley et al., 2005) This is supported by the findings of Study 2 and Study 3 whereby osteopaths characterise OC as an approach which empowers its patients with the intention of them regaining agency and control over their condition. Given the multifactorial nature of how pain is processed and interpreted by the brain (Gifford, 1998), this hypothesis may go some way to explain how positive benefits have been found in PR-LP as a result of receiving OC. Please see below, Fig 9.2 for a thematic flow diagram which represents the proposed TA of OC within the management of PR-LP.

Figure 9.2 Flow Diagram Illustrating the TA in OC for the management of PR-LP with Proposed Explanations



9.4 Relevance for Practice

Osteopathy is a profession which has strong ties to manual therapy. The “osteopathic diagnosis” is often focussed within the “tissue causing symptom” paradigm which identifies areas of dysfunction with muscles bones and joints. The identification of “lesioned” areas known as somatic dysfunction is considered central to osteopathic diagnosis and treatment (Fryer, 2016). Concepts of biomechanical function or patient care as an interplay between these anatomical regions and their relationships with other parts of the body can be corrected via osteopathic treatment is central to osteopathic clinical reasoning (Cotton, 2013). However, a large body of evidence shows that patients in pain, particularly persistent pain, are subject to SCEs cognitions, illness behaviours and fears which are not amenable to physical treatment alone (Vlaeyen & Linton, 2000; Vowles et al., 2008; Pincus et al., 2013; Turner-Cobb et al., 2015). Indeed, the debate regarding manual therapeutic approaches in pain management has continued for several decades (Jull & Moore, 2012). This contention is based on evidence in support of lifestyle and psychological factors demonstrated to be the greatest impediment to recovery (Geri et al., 2019). Epistemological criticism, specifically of osteopathy has for some time been centred on how its principles are indistinct from its practice and the practice of other professional groups who aim to help the same clinical problems (e.g. LBP) (Tyreman, 2013). Similarly, more recent criticism has centred around osteopathy having a weak theoretical basis which is characterised by biomedicalism, monointerventionism and practitioner centredness. This research has called for ongoing critical reflection and a reconceptualisation of practice, specifically that osteopaths should draw on theory and evidence from outside the osteopathic domain (Thomson & Macmillan, 2023).

In partial support of this, historical and conventional forms of diagnosing via proposed “osteopathic lesions” and reductive approaches which are solely focussed on the body are outdated (Lungh et al., 2016). This supports the position of Thomson and Macmillan (2023) regarding a weak theoretical basis. However, the findings across the studies of this project seem at odds with assertions that osteopathy is monointerventionist and practitioner centred. PR-LP patients in Study 1 reported a range of experiences from OC such as feeling listened to, feeling that care was individualised, feeling that through their therapeutic interaction, they felt reductions in fear and maladaptive cognitions associated with their PR-LP. Thus, they reported that OC facilitated a return to normal activity and an increased ability to cope with present day events and events in the future. Additionally, Osteopaths in Study 2 characterised their TA as being patient-centred, adaptable, nuanced to individual patient needs and generally reflexive. This seemed to occur, firstly from the use of traditionalist osteopathic principle-based foundation but then rapidly segue into more nuanced and patient-centred form of reasoning and care. This was described often in the context of drawing on other domains of knowledge such as psychologically informed practice and active listening. These findings were generally validated

to have high levels of concordance with a final group of osteopaths in Study 3. These findings highlight the possibility that what occurs in the TA of OC for PR-LP may be more nuanced and sophisticated than current criticism hypotheses and as such, highlights the need for further research into what is occurring in the TA of OC, both within PR-LP and generally.

A recent scoping review of primary literature (Phillips, 2022) of what comprised osteopathic professional identity, identified, via thematic analysis, key areas of osteopathic traits and debates, cohesion, and conflict at individual and collective levels. Osteopathic identity in this case was highlighted to be complex and subject to many influences pre and post qualification. The author further identified that specific to their therapeutic role, osteopathic literature supported the prevalence of more reductive concepts such as they saw themselves as “fixers” in the paternalistic sense (Figg-Latham & Rajendran, 2017; Thomson et al., 2014). However, this was reported as being sometimes due to patient perceptions of the nature of OC. More commonly this review identified osteopaths’ perceptions of facilitating healing which engaged with strategies to increase confidence and influence pro-active behavioural change in their patients. Relevant to this study This was also considered by osteopaths to be via patient education and collaborative decision making (Roots et al., 2016). In relation to the extant literature, Philips (2022) summarises that the TA of OC is overwhelmingly imbued with the importance of communication and professional relationships between patient and practitioner, with implied osteopathic values prioritised as trustworthiness, empathy and respect. From the findings of across Studies 1-3, this position (Philip 2020), appears to be consolidated by the findings from both patient experience and practitioner perspective(s). This research therefore underscores the importance of further consideration of how OC impacts PR-LP and how this should potentially direct practice guidelines and awareness of OC for PR-LP. This may be particularly relevant given the socioeconomic and health-related impacts of the condition (Bergström et al., 2016; Gutke et al., 2014; Truong et al., 2017)

Furthermore, following on from previous work which highlights OC’s potential impact on pain-related psychological distress (Westmoreland et al., 2007) should further future clinical research in the form of cohort studies and RCTs highlight the utility of OC in PR-LP, this has potential to impact UK osteopathic practice by widening access, within the NHS of osteopathic services to PR-LP patients. This is particular relevance to the psychological distress, known to be associated with PR-LP which is predictive of poorer long-term clinical outcomes (Burt et al., 2002; Olsson & Nilsson-Wikmar, 2004)

As discussed, UK osteopathy is a praxis which varies very significantly between individual practitioners. There is an absence of protocol or algorithm-driven approaches to diagnosis such as is seen in physiotherapy (Guys and St Thomas’, 2024). Even within the praxis itself some practitioners may focus

on “involuntary motion” techniques which involve holding the head or another body part for the entire duration of an osteopathic treatment (Gabutti & Draper-Rodi, 2015). Others may engage with a more conventionally understood assessment and treatment of the patient. However, what is clear is that the content of the therapeutic encounter is not reducible to paternalistic approaches which are focussed on “fixing” the body. Historically, and through the conventional osteopathic education pathway in the UK, osteopaths are exposed to concepts such as mind-body inter-relatedness, often described as the “osteopathic triad” of mind body and spirit. This construct appeared throughout Study 2 of this project whereby osteopaths attempted to describe aspects of OC in PR-LP which went beyond biomedicalism and the biomechanics of somatic dysfunction. This finding, particularly in the context of recent work exploring osteopathic professional identity (Philips, 2022), has been cited as having specific meaning to osteopathic practice today (Zegarra-Parodi et al., 2021). Whilst the interrelatedness of mind, body and spirit may seem archaic in the current era, the parallels to the BPS model are evident in that osteopaths may be trained to appraise interconnecting domains of a patient’s life experience with a view to how they are impacted by pain and disability. The results of this project highlight that previous work (Hidalgo et al., 2024; Thomson & Macmillan, 2023; Tyreman, 2011) may have overlooked the nuanced ways in which osteopathic practitioners are biopsychosocially *primed*, despite what has been shown to be a suboptimal or dissonant view of integration of these concepts in formal osteopathic education (Abrosimoff & Rajendran, 2020) (see section 9.3).

From the findings of this project, OC in PR-LP represents a complex intervention which is constructed via meaning which osteopaths derive from patient-centred cues to deliver tailored management to their patients. The importance of this in PR-LP is indicated by the negative impact of pain levels and associated psychological distress have on the prognosis of pain at during and after pregnancy (Olsson et al., 2012) and that OC has a role in the treatment of this condition (Franke et al., 2017). It is also indicated that a range of key aspects which may mediate the relationship between OC and the return to normal daily life are consistent with psychologically informed practice. For example, treatment time, individualised and adaptable care, time and the development of trust, therapeutic touch and patient-centred reflexivity are prioritised by osteopaths in the management of PR-LP. Given epistemological division regarding the nature of OC, this project highlights the need for standardised guidance to improve osteopathic practitioners’ understanding of the lived experience of PR-LP and what aspects of OC may represent good practice.

9.5 Relevance for Education

From the findings of this project, the lived experience of PR-LP is characterised by three main areas which impact the PR-LP patient's life. Firstly, a disruption to normal functioning. This includes impaired mobility, a reliance on other members of the patient's social group and difficulty with activities of normal life such as household chores, sleep function and engagement with recreational pursuits. Secondly, PR-LP patients also experience psychological distress which is related to fear of pain, low mood, emotional distress, and hopelessness. Lastly, PR-LP patients appear to be affected by more complex pain-related cognitions which are focused on negative self-appraisals of the individual's past and future selves and with others. This is indicated to be related to the impairment in the perceived ability to cope with both current and future events, due to PR-LP.

At the outset of this doctoral project current understandings of the lived experience of PR-LP were limited. What was understood suggested that patients that experienced PGP (rather than PR-LP) during pregnancy greatly affected experiences of pregnancy, roles in relationships, and social contexts (Persson et al., 2013). The findings of part of Study 1 aligned to the patients experience and demonstrated that this experience was broadly similar to the experience of PRLP rather than PGP alone (Please see Chapter 1 for a discussion on the similarity between PGP, PR-LP and LBP). Additionally, more recent work (Cepnija et al., 2022) has demonstrated that individuals with PGP (only), living in Australia, experienced significant disruption to daily activities and an increased reliance on social support. The individuals in this study also experienced cognitions around the perceived judgment of "being a burden" to members of their social network. The first part of Study 1 in this current project adds to the developing body of work on PR-LP in that it affirms this previous and later work and highlights cognitions related to negative self-appraisals and perceived impacts on coping. The implications of this part of Study 1 therefore are that as more is understood regarding the diversity of the PR-LP experience this should inform the awareness and education of health professionals who are involved in the management of the condition. This is of particular importance given the impact that psychological distress has on the pain experience and in pregnancy (Olsson et al., 2012). Of note is that the first part of Study 1 revealed that PR-LP individuals experienced hopelessness. This finding should inform guidance on the identification of mental health issues in PR-LP due to the link between hopelessness and mental defeat (Tang et al., 2007) and the potential impact that this could have on PND.

Prior to Study 1 little was known regarding the lived experience of receiving OC for PRLP. This Study highlighted that OC mediated the severity of PR-LP and rapidly facilitated a return to normal activity, reduced pain, disability and the reduction of negative cognitions associated with the pain experience. The implications of this albeit small, study should be to inform future research and the further

development of clinical guidance for professionals on the impact of OC in PR-LP. This should also inform the context of educational programmes which train professionals involved in PR-LP. However, given that the sample size of this IPA study was small, further and more diverse research strategies should be employed with larger sample sizes to confirm the generalisability of these findings (See also Section 7.4)

Study 2 of this project explored how the TA in OC was established in PR-LP. As discussed, this was indicated to be imbued with complex and multifactorial aspects of care which represented OC in the management of this condition. The relevance of this for osteopathic education is complicated by relative levels of dissonance within the profession of UK osteopathy as to what represents OC. As previously mentioned, (Section 7.2) debate currently prevails regarding the whether OC is aligned to PCC (Thomson & Macmillan, 2023). From the findings of Study 2 and its confirmatory study (Study 3) the case can be made that current criticism of practitioner-centred approaches in OC is limited in its generalisability to a professional praxis as it lacks deeper involvement with how practitioners engage with their patients in given clinical conditions. Further work which supports this has recently highlighted via qualitative strategies that osteopaths involved in treating LBP engage in coaching approaches and psychological tools such as reassurance, education and collaborative approaches to implement the BPS model alongside more conventionally understood “osteopathic techniques” (Abrosimoff & Rajendran, 2020).

The broader implications of these findings to osteopathic education should initially be to establish more complete understandings of UK OEI curricular content to ensure greater awareness (and teaching) of the psychological comorbidities and the impact of how psychologically informed approaches, used within OC can mediate persistent pain in PR-LP (and other conditions). This presents challenges to its implementation as all the (currently) seven UK OEIs have different curricula and these institutions may be less in favour of disclosing the detail of this due to commercial sensitivity. However, given the importance of psychologically informed practice in the management of PR-LP this, could strategically take place via a standardisation process led by the GOsC. Further challenges around the uptake of psychologically informed practice are identified by work which highlights that even with institutions having such content (e.g. the BPS model) in their curricula, dissonance has been demonstrated with regards to its teaching at the classroom level (Abrosimoff & Rajendran, 2020). This dissent has also been demonstrated more broadly with regard to antipathy towards professional guidance within the UK osteopathic profession (Figg-Latham & Rajendran, 2016). The findings of this research therefore further highlight the potential need for future strategic cohesion between UK OEIs, practice-based learning and undergraduate curricular content.

9.6 Relevance for Future Research

This project highlighted several areas where further research may benefit PR-LP patients and the profession of UK Osteopathy. The rationale for continued research into PR-LP and the aspects of this experience are clear given the significant detrimental effects on individuals living with this condition (Cepnja et al., 2022; Olsson et al., 2012). This project added further detail to what was known regarding SCEs and maladaptive cognitions which can occur during PR-LP. Most significantly, these were pain-related fear and emotional distress which were related to feelings of hopelessness and cognitions associated with loss of agency and the concept of self-enmeshment (Morley et al., 2005; Sutherland et al., 2008). As discussed in Chapter 2, psychological distress which is characterised by hopelessness can be related to the concept of mental defeat. This phenomenon has been implicated as a key indicator for heightened suicide risk, which is precipitated with effects not explained by depression (Tang et al., 2013). As such, the findings of Study 1 may indicate further research into this vulnerability amongst individuals living with PR-LP. Regarding the phenomenon of self-enmeshment, little is known as to how prevalent this is within PR-LP and how this impacts the maintenance of persistent pain within this population. Therefore, Study 1 may indicate that further research which explores this will allow for the design and implementation of research which more easily identify and treat these maladaptive cognitions. Furthermore, exposure to stress during pregnancy is considered to be an important and potentially modifiable risk factor which impacts child health outcomes post-partum (Vehmeijer et al., 2019). The research from this doctoral project therefore highlights the need for research into the awareness of mental health safeguarding and suicide-risk triage (Desjardins et al., 2016) within the UK osteopathic community.

Study 1 also indicated that PR-LP patients who received short courses of OC during their pregnancy experienced rapid relief and return to normal ADLs as well as an increased coping. This research was exploratory in nature and as such definitive conclusions cannot be made from the findings of this small study. However, the implications for research from this may indicate the appropriateness of further work in the form of clinical trials which examine the impact of OC on PR-LP and related psychological outcomes. In relation to this, further research could also explore the implementation of psychological approaches, related to patient engagement such as motivational interviewing, of which active listening is a component (Westra & Aviram, 2013) alongside OC to establish whether benefits in psychological outcomes can be augmented with the addition of these.

Study 2 and its confirmatory study (Study 3) highlighted that aspects of OC in the management of PR-LP were complex and nuanced. A range of research questions stem from this. Firstly, as this study was small, and could have been subject to selection bias (See also Section 9.6: Limitations) significantly larger follow-up research such as a Delphi study (Skulmoski et al., 2007) could gain further and more

generalisable understandings of the nature of the TA of OC in PR-LP. This could benefit osteopathic research via exploring in further detail its perceived remit, strengths and weaknesses in the management of PR-LP. Secondly, from the research, questions arose around the nature and application of reassurance as part of therapy. Conventional understandings (See also section 6.7.3.1) indicate that combining affective and cognitive reassurance together is not clinically useful (Coia & Morley, 1998; Pincus et al., 2013). However, the Osteopaths across Study 2 and 3 lacked a consideration of this as part of their OC. Additionally, they described their form of reassurance to be characterised by a “blending” of both forms of reassurance alongside therapeutic touch. Less is known around how combined touch and verbal communication, may assist patients when compared to reassurance alone. Although a recent narrative review, (Baroni et al., 2022) since the inception of this project, has supported that therapeutic touch may interact with aspects of OC to support shared decision making and individualised care. This contemporaneous research may in part consolidate this project’s finding that these two forms of reassurance was reported to be beneficial generally. Further research could explore these constructs clinically considering their impact in PR-LP and aspects of OC-related fear reduction which are not fully understood (Westmoreland et al., 2007).

9.7 Limitations

9.7.1 General limitations

The limitations of this project are identified within several possibilities which could affect the generalisability of findings to osteopathic practice, education, and research. For example, initially it is relevant to highlight that across the three datasets of the study different non-homogenous populations of patients and osteopaths participated in the studies. When considering the quality of empirical work, homogenous populations would be ideal to investigate whether a complex intervention such as OC impacted clinical outcomes positively (Franke et al., 2017). However, the nature of the research in this project was exploratory and aimed to establish a theoretical basis for what was not previously understood regarding how the content of real-world osteopathic treatment may lead to positive benefits in PR-LP. As previously discussed, (Section 2.3) sensory perception has been shown to be altered in pregnant individuals (Palsson et al., 2015) which theoretically may potentiate the development of the persistent pain state, particularly if the individual is subject to increased psychological stress (Wu et al., 2004). Previous work (RCT) examined the nature of PR-LP and demonstrated that PR-LP patients had improvements in pain and functional capacity from undergoing OC, however it was not clear which aspects of OC were attributable to this. Therefore, this project aimed to gain deeper understandings of lived experience of and the therapeutic nature of OC for PR-LP.

Prior to commencing the empirical studies of this project, a literature review was completed. The format of this was initially decided by peer debriefing sessions to be a pragmatic review (York Health Economics Consortium, 2016). However as discussed in Sections 3.9 & 9.7, the breadth of the topic area(s) did not lend itself optimally to this focussed and specific approach. Through further peer debriefing and discussions with my Supervisory Team, a narrative review approach (Gasparyan, 2011) was considered to offer the flexibility which addressed the research question and aims of the literature review. This was still challenging as, given how small the osteopathic profession is globally, there is a relative paucity of literature which specifically addressed the aims of the review. This led to me, at times using a range of sources from the “sister” profession of physiotherapy as a comparator. This was done largely as physiotherapy patients present with similar MSK problems as osteopathic patients. On reflection I would consider that using a different strategy may have been suitable. This position stems from two main points. Firstly, the modalities employed in physiotherapy for PR-LP may be similar to osteopathic practice but then again, they may not. And what commonly constitutes physiotherapy in RCTs can include a range of additional therapies such as acupuncture, weighted belts, and TENS (Gutke et al., 2015) that may not be provided by osteopaths and as such is less representative of OC. Secondly, through the process of interviewing a number of osteopaths across Studies 2-3, I realised more than I had previously, quite how osteopathic identity informs praxis and therefore, the therapeutic context in which it occurs and can make this quite distinct from comparisons to “sister” professions. Therefore, an alternative strategy which may have been useful to address the breadth of topics which the literature review attempts to cover could be a scoping review. Scoping reviews are a tool considered to be useful in examining emerging evidence which is unclear and the subsequent areas which may be explored in order to inform research and practice (Munn et al., 2018). This has relevance when considering this project as this form of review can report on the types of evidence that informs clinical practice and the way the research has been conducted. The aim of this can be to identify and delineate the available evidence (Anderson et al., 2008)

Regarding the empirical studies in this project, my own biases as an osteopath and educator of osteopaths are another aspect to consider within what limitations may impact this project. Personal views collected over a 20-year career could affect the nature and importance of phenomenological and thematic interpretation. With regards to the initial IPA study, mitigation of this was attempted by having a sample of the interpretation jointly coded and reviewed for bias by a member of the Supervisory Team. Regarding the thematic analysis in Study 2 and 3 my own subjectivity as the researcher was integral to the process (Braun & Clarke, 2006). However, iterative and continuous deep immersion in the coding and interpretive process was essential to construct meaningful codes and

themes which were then also reviewed by the Supervisory team for appropriateness in relation to the datasets.

The nature and direction of the interview in Study 3 took an unexpected turn (see also Sections 6.3.2 & 8.4). The osteopaths in this study largely commented from first-person perspectives rather than a more strategic, all-encompassing manner regarding the Clinical Toolkit. This meant that the osteopaths discussed the toolkit in the context of “I do this”, or “I do not do that”. This data was not as amenable to reflexive thematic analysis (although themes were collated: Appendix 22) as was expected at the design of this final study. The focus group interview however did provide rich data, regarding the feasibility and significance of the toolkit, and therefore the findings, of Study 1 and Study 2 to the “coal face” of UK osteopathic practice. On reflection, this may have been a better way of conducting this study at the outset and I may have projected a way of thinking about clinical guidance onto the participants, which led to the construction of more themes than were necessary to answer the research question.

Another limitation which could have affected Study 1 is that the PR-LP patients that participated in this study were self-selecting and may have positively responded to the research advert because they had previously had positive effects from OC (see also Sections 5.7, 6.7 & 8.7). This could have impacted the generalisability of the data as it did not account for negative experiences of receiving OC in the management of PR-LP. These participants were also reporting their experiences retrospectively which may have impacted the accuracy of the reported experience (Talari & Goyal, 2020).

Similarly, the generalisability of the findings in Study 2 to UK osteopathic practice may have been affected by the possibility that osteopaths who responded to the advert were keener to engage in research. Recruitment for this study was slow and whilst sufficient osteopaths in each group attended, this was a very small amount compared to the hundreds of potential participants that were invited to participate. In the context of research which highlights tension within the osteopathic profession regarding the utility of research (Cotton, 2013) and the uptake of clinical guidelines in general (Figg-Latham & Ragendran, 2016) this may have meant that Study 2 found the TA to be characterised mostly by aspects of OC which were reported by a sub demographic of “research-favouring” practitioners, which could logically impact the accuracy of the depiction of UK osteopathic practice.

9.7.2 Trustworthiness in qualitative research

By its nature qualitative research cannot be assessed for validity via scientific measures such as statistical analysis. Therefore there has been an historic need to explore the relative “rigour” of

qualitative research via frameworks which relate to how realistic and meaningful its findings and conclusions are out with of the numerical measurements of probability and reliability (Adler, 2022).

Lincoln and Guba. (1985) previously established the concept of trustworthiness in qualitative research. This conceptual framework is broadly considered to be comprised of the components of credibility, dependability, confirmability, and transferability. Credibility is considered to be ensured by the processes of prolonged engagement with participants in the field as a means to build rapport and understand the nuanced depth of their perspectives and experiences (Dodgson, 2019). Researchers are also considered to develop transferability by collating “thick” descriptions of the contextual information about participants and clearly articulating sampling processes in order to ensure that research is transposable alternative situations (Haq et al., 2023). Additionally, the component of dependability refers to how research findings may remain consistent over time and is considered to be ensured by strategies such as creating comprehensive audit trails of research processes and decisions which allows other researchers to reproduce the results (Ahmed, 2024). Finally, confirmability pertains to the objectivity of qualitative findings and is considered to be maintained by processes such as reflexive journalling and peer debriefing (Enworo, 2023). Confirmability is also augmented by the process of member checking whereby participants examine and validate the accuracy of the findings (Ahmed, 2024). Please see Table 9.1 for an overview of these components and related strategies.

Table 9.1 Summary of Components of Trustworthiness in Qualitative Research (adapted from Ahmed (2024)).

Trustworthiness Component	Strategy to Ensure Trustworthiness
Credibility	1. Prolonged Engagement: Spend enough time in the field to build rapport with participants to understand their perspectives deeply. 2. Reflexivity: Acknowledge personal biases and preconceptions throughout the research process. 3. Triangulation: Employ multiple data sources or methods (e.g., interviews, observations, documents) to cross-verify findings.
Transferability	1. “Thick” Descriptions: Provide detailed contextual information to enable readers to assess the transferability of findings. 2. Sampling Strategies: Clearly articulate the sampling process and criteria to justify the potential transferability of the findings.
Dependability	1. Methodological Documentation: Detail the research procedures and decisions made during the study. 2. Audit Trails: Keep an audit trail of research decisions, changes, and data analysis processes to ensure traceability.
Confirmability	1. Peer Debriefing: Engage with colleagues or experts to review interpretations and findings, minimizing researcher bias.

	2. Member Checking: Allow participants to review and confirm the accuracy of the findings to enhance confirmability 3. Reflexive Journaling: Keep a reflective journal of personal thoughts, biases, and reflections throughout the study.

At the end of this PhD project, it is useful to explore these concepts in relation to the three empirical studies which comprise the project. This can further benefit successive or related projects which stem from the research question(s) and the publication strategy of future research. This is discussed below in relation to Studies 1 through to 3.

9.7.2.1 Study 1

In Study 1 aspects which supported credibility and confirmability were my engagement with the iterative process of IPA interviewing and coding which facilitated the construction of superordinate and subordinate themes. I engaged with the IPA method after familiarising myself with this in the writing of Chapter 1, 3 and 4). The process of peer debriefing through Supervisory Team review of multiple drafts of the ethical application and then subsequent response to Chair's Action points then formed the basis for reflexivity which was assisted and deepened by journalling my reflections and thoughts as the research process developed (See also Chapter 2). This study was less amenable to ensuring triangulation as it only collected data from one set of IPA interviews. However, this did necessitate an iterative review of the entire data set as per the IPA process (Smith et al., 1999). These processes also aligned to concepts around credibility whereby my reflexive processes allowed me to consider key aspects of my "outsider" status in researching women's health and pregnancy in general. At this stage of the research, I was also able to reflect upon my novice status as a qualitative interviewer which I did in an endeavour to be better at the construction and management of interviews in the following two studies. Additionally, in respect of confirmability I engaged in the strategy of member checking which allowed me to discuss the construction of themes and interpretation of data through shared discussions with my Supervisory Team via a review of coding processes at the mid-point of the IPA process. Where this study potentially could have further trustworthiness lies within the component of transferability (Fig 9.1). For example, whilst sampling strategies were clear in this study, there was a lack of "thick" descriptions of the participant characteristics. This lack of contextual information may have led to less transferability of the findings and conclusions to participants whose experiences may have been impacted by differences in socioeconomic situation, accessibility of osteopathic care in their locale and if they were paying for their osteopathic treatment. This is of note specifically as some participants consulted private osteopaths whereas some attended a student-led clinic supervised by osteopathic clinical tutors. Indeed, this contextual difference may have led to differences in

experiences between participants and should inform methodological and interpretive decisions in future studies.

9.7.2.2 Study 2

In Study 2 the concept of credibility was further supported by my engagement with the process of conducting multiple focus groups of osteopaths and the iterative process of thematic analysis which stemmed from this. This was also served by a reflexive process whereby I shared my notes and samples of coding with the Supervisory Team for review. This informed peer debriefing sessions in a similar manner to Study 1. The three, larger datasets required in this study also required me to engage in triangulation of the data across multiple sources, indeed this data informed the construction of prompts and probes at successive focus group interviews of UK osteopaths. This represented my engagement with strategies to ensure dependability as, similarly to Study 1, a sample of coding was reviewed by the Supervisory Team, and this informed regular peer debriefing meetings. Additionally, the strategy of keeping audit trails (as it was across all three studies) was necessary here to maintain the requirements of methodological and ethical decisions which informed the construction of the studies and how one study informed the design of the successive study. Regarding transferability, sampling strategies were clearly documented (see Sections 5.3.2, 6.3.2 & 8.3.4) and “thick” descriptions of the osteopathic participants were used to allocate them into groups of clinical experience (see Section 5.3.2). On reflection however, one aspect which could however provide greater depth and transferability, would have been to implement a pilot group of osteopathic practitioners in a smaller study before commencing Study 2. Alternatively, or in addition the participants could have been provided with a post-hoc summary table or documentation of the findings of Study 2. This could have represented a greater degree of participant involvement which may have positively impacted the transferability of findings and the construction of summary tables (Such as Fig 6.2) and information which was used to provide reflective platforms (Appendix 20) for the participants in Study 3. This would, however, have been very challenging due to slow data collection and my own academic workload as a Senior Lecturer at this stage of the PhD project (See Sections 5.8, 6.8 & 8.7,).

9.7.2.3 Study 3

In Study 3 I constructed a Clinical Toolkit (Appendix 21) as an initial draft pilot to inform clinical practice the focus group interview in this study. This was based on a reflective process detailed in Chapter 7. This required a prolonged engagement with UK osteopathic practitioners in an extended focus group. From this I derived the data sets of Study 3. Prior to this I constructed the Clinical Toolkit (Appendix 21) which required multiple peer debriefing meetings to establish suitability and concordance of

clinical toolkit components (Fig 7.1) which were representative of the findings of Study 1 and Study 2. Through this process I engaged with key strategies (Fig 9.1) related to credibility and confirmability. The audit trail process for this and methodological and ethical decisions which required iterative drafts and study design modification in response to peer debriefing and Ethics Committee further represented identified strategies to ensure dependability (Fig 9.1). Additionally, because Study 3 had unexpected findings regarding the responses of the participants (see also Sections 6.3.2 & 8.4) this led to further peer debriefing and reflection in order to establish the best way to proceed. On reflection, where Study 3 could have had potentially further engagement with processes related to trustworthiness can be found in the component of transferability. Similar to Study 1, “thick” descriptions of the participants were not collated, and this did not inform the interpretative process of the findings of this study. This may have impacted generalisability (Ahmed, 2024) and overall study quality. An exception to this was that I did record, via the Study 2 Consent Form (Appendix 9) if participants held or had previously held an academic or teaching position as this may have been relevant to the findings of this study. However, none of the participants in this study were currently or had previously been engaged in training osteopaths. Similarly, I recorded whether the participants in this study held specialist post-graduate training in pregnancy-related pain. However, no participant in this study had such training.

9.7.3 Summary of Qualitative Trustworthiness in This Project

Across Studies 1-3 key elements of credibility were engaged with due to prolonged engagement with participants as well as triangulation and cross referencing of multiple datasets and their accompanying documentation. This was underpinned by reflexive processes regarding my own biases (Sections X and Y). Key strategies in ensuring dependability were also engaged with via maintaining an audit of key methodological decisions and changing variables in response to aspects of ethical research and participant recruitment (Sections 5.3, 6.3 & 8.3) as the development of the studies proceeded. These procedures were informed by regular engagement in strategies which are considered to ensure confirmability such as peer debriefing and reflexive journaling (See Chapter 2). However, this project could have likely been strengthened with regard to confirmability in Study 1, 2 and 3 by engaging with member checking of the findings and conclusions (Fig 9.1). This may have been most relevant from the largest dataset (Study 2) whereby the construction of material (Appendix 20 & 21) may have been augmented by a review of the participants in this study. Similarly, a greater engagement with transferability and the collation of “thick” descriptions of participant characteristics in Study 1 and 3 may have added more insight as to how transferable the findings and conclusions of these studies were in relation to their respective populations across the UK.

9.8 Conclusion

PR-LP represents a significant challenge for a significant proportion of individuals who live with the condition. Not least because pregnancy is associated with a range of health challenges which can be encountered due to increased physical and physiological demands at this time. PR-LP is associated with disability and impairment of ADLs. The impact of this on PR-LP patients' lives may be associated with increased psychological distress. This psychological distress may be characterised by components of the FA model such as pain-related fear, anxiety, and catastrophising, which in turn compound the clinical picture leading to lower levels of activity and less engagement in pro-active health behaviours.

At the outset of this project it was understood, from qualitative research findings in the grounded theory literature that individuals living with PR-LP suffered physical disability, and increased dependence on family relationships. Additionally, further work had also shown that those that PR-LP sufferers can experience severe pain which is characterised by significant emotional impacts. The results of the first part of this project (Study 1) affirm and consolidate these findings. The results of this current research project have also provided additional insight into what is known regarding the lived experience of individuals who live with the condition. For example, this project highlights that the perceived threat and intensity of PR-LP in combination with physical disability can lead to social withdrawal, low mood and a cessation of recreational activity. These factors are known to be associated with poorer levels of mental health such as anxiety and depression. This project also highlighted negative impacts on the cognition of those living with PR-LP. Emotions such as guilt and hopelessness can affect PR-LP sufferers and lead to negative self-appraisals and cognitions which align with conceptual understandings of self-enmeshment, reduced agency, and coping. Given that psychological distress is known to be impactful to women's lives during pregnancy and post-partum, these findings add to the growing body of literature which highlights the importance of effective treatment of PR-LP and related psychological distress.

Individuals living with PR-LP have been known to access CAM and allied health providers outside of the NHS. This has previously been investigated to be related with dissatisfaction with standard care. This project also explored the lived experience of how OC impacted PR-LP. Novel findings from this research demonstrated that in undergoing OC for the treatment of PR-LP, patients experienced a rapid relief of pain and physical disability which appeared to be associated with in-tandem reversal of negative cognitions, low mood, fear, and pain related psychological distress. All of which was associated with a rapid return to normal life. These patients experienced OC as being characterised by an enjoyable process which was imbued with education, reassurance and the validation of their suffering.

Conceptual understandings of OC vary significantly. For example, within the profession of osteopathy significant debate surrounds assertions of patient-centredness and the applicability of its historical principles to modern understandings of what represents best practice. This, rationally calls into question the positive impacts that the participants in Study 1 experienced. To address this, the second part of this project involved an in-dept exploration and analysis of how UK osteopaths established the TA in their management of PR-LP. Osteopaths across a range of levels of experience reported constructs of care which were complex, nuanced, and brought together a range of affective and educational constructs of therapeutic interaction. The results of the second part of this project call into question critical positions of modern OC being reducible to practitioner-centred biomedicalism which lacks a fuller appraisal of BPS and individualised approaches to care.

These findings were subjected to a preliminary validation process via the design of a clinical toolkit which aimed to encapsulate the findings of the previous two studies. This clinical toolkit was then critically reviewed by a focus group of UK osteopaths who demonstrated generally high levels of concordance with the findings of how the TA of OC was established in the management of PR-LP.

Overall, this project highlights the need for further research into the negative physical and psychological impacts that PR-LP brings. This project also further highlights the need for research of the therapeutic interaction which occurs within treatment between osteopaths and their patients in PR-LP and a range of MSK conditions.

9.9 Final Reflection

When engaging in qualitative research it must be acknowledged that the subjectivity of the researcher is essential to the process. However, previous experiences and beliefs will influence this process. As discussed in Chapter 2, throughout this project a reflexive thread details this process at each stage of the work. In Chapter 1, I initially considered my position within the research. At the time I was responsible for teaching undergraduate osteopaths clinical skills across the last two years of their studies. I also taught pathophysiology to osteopathic students and other undergraduate students across a range of clinical and pre-clinical programmes at Swansea university. This activity was informed by my completion of my MSc in Pain Science at King's College London in 2009 as well as years spent in private practice where I had cared for many PR-LP sufferers and assisted with their rehabilitation. At this stage the limitations of my biases became evident. I was no expert in PR-LP but given that I was very conversant with the cellular and molecular basis of disease, taught clinical aspects of managing pregnant individuals, and was experienced in treating PR-LP: "surely I would find this straightforward?". It was not to be the case. In deepening my understanding by becoming more aware

of the literature on PR-LP I realised that PR-LP patients were subject to a range of psychological distress which I had not fully anticipated. I was quite aware of the various models of pain-related cognitions and illness behaviours that affect persistent MSK patients, yet I realised I had not fully comprehended the potential vulnerability of persistent pain's impact during pregnancy and how this must be experienced for an individual living with PR-LP. Indeed, it became apparent that I was making the same assumptions that drive suboptimal management by focussing my understandings within the positivist and biomedical understandings that had characterised my clinical education to date. From this point I became affected by a renewed enthusiasm to appreciate the nature of PR-LP from the patient's perspective. This was particularly challenging as from my outsider (Male) status, I began to question if indeed, I *should* be researching this condition. This was compounded by conversational interactions with colleagues which focussed sometimes on: "Why are *you* researching *that*?". I was able to mitigate this in-part by research journalling where I could give voice to my concerns. Peer debriefing via supervisory meetings was also of enormous help where I could realise that, whilst my subjectivity as a qualitative researcher was important there was still an objectivity to the process and despite never being fully able to situate myself within the perspective of PR-LP patients, I was responsible for maintaining a theoretical objectivity, a *distantness* which facilitated scrutiny of enquiry.

During Chapter 2 I had further reflexive methodological decisions to make. Very little specific research was focused on osteopathic treatment of PR-LP or the therapeutic interplay within OC. Whilst this was a source of frustration, I was able to mitigate this to an extent via the narrative review process whereby, aided by peer debriefing with my Supervisory Team, I made critical fine judgements regarding the transposable nature of physiotherapy literature, of which there was a greater amount. Essential differences here, which may have been relevant to the lived experience of undergoing physical treatment for PR-LP, were the clinical setting within which treatment occurred, and the quantity of therapeutic touch involved in the process and how this may influence patients through CFs and the therapeutic ritual of touch. Chapter 3 (and reported methodological decisions in Chapter 5, 6 and 8) describe the ongoing selection of qualitative method and how this informed the overall research design. The principal decisions here focussed on how to align findings from one study which used IPA to a further study (Study 2) which use thematic analysis. My choice of changing this method was informed by no longer needing a deep personal view of the lived experience of a condition (IPA) to attempting to access group dynamics and communication of a range of individuals and how they described their professional praxis. Here, the inherent flexibility of thematic analysis was useful, and I began to really enjoy the process of iterative, reflexive analysis of the transcripts as the theory developed. My own assumptions around practice and my knowledge as a practitioner were challenged with the deepening journey into my professional colleagues' experience. I realised that, through

engaging with qualitative research and analysing the transcripts of the osteopaths in Study 2 who championed listening to their patients' complaints and engaged in multiple nuanced ways that my own clinical practice could be improved by listening *further* to my patients' narratives.

In constructing the Clinical Toolkit (Appendix 22) I had to engage with challenging reflexive processes which are discussed in Chapter 7. The literature on clinical toolkits is diverse and no specific template appeared useful for the purpose of the findings across Study 1 and 2. As a previously employed Academic and Programme Director I was used to creating and reviewing documentation for submission of Recognised Qualification Status for review by a governing body. However, each draft that I sketched out in paper format appeared too complicated and long-winded for dissemination. I was further informed by concepts of antipathy and dissent towards formal guidance which I had discovered both in the peer-review literature and as a post graduate educator of practising health care professionals in the UK and across Europe. From my own individual experience, uptake and feelings towards formal guidance varied significantly within the osteopathic community. Naturally, this process would have been affected by my own biases however, through the peer debriefing process of supervisory meetings I was able to reflect on the nature of clinical guidance and benefit from the perspectives of my Supervisory Team. These perspectives were useful in maintaining objectivity as my Supervisors were not osteopaths and therefore allowed me to see how the draft guidance should be straightforward and encapsulate the main aspects of the relevant findings. I therefore adopted a similar framework to the OPS as I reasoned this would have familiarity with the participants and not introduce additional complexity that may have impacted the discussions in the semi-structured interview.

The final empirical chapter (Chapter 8, Study 3) set out to use thematic analysis once again, to gain further insight as a method of validating the findings of Study 2, within the context of the experience of PR-LP and OC's impact (encapsulated within the Clinical Toolkit). On reflection I could have designed this differently. Having previously sent the draft guidance Clinical Toolkit (Appendix 21) out 1 week prior, the participants had time to develop specific views which predominantly were rooted in their own practice of OC. Whilst themes were constructed that aligned to Study 2's findings the data that was collected from this study illustrated by concordance and consensus, had addressed the research aim of conceptualising praxis more directly than I had imagined. As I returned to clinical practice at the end of the Covid-19 pandemic, I reflected that I was possibly projecting a requirement as a previously employed full-time academic to think strategically on a national level regarding the implementation of clinical practice. Indeed, through Study 3, what I discovered echoed what I sought in a return to practice, the wealth and depth of human experiences, at face value.

References

- Abrosimoff, M., & Rajendran, D. (2020). 'Tell me your story' - How osteopaths apply the BPS model when managing low back pain - A qualitative study. *International Journal of Osteopathic Medicine*, 35, 13–21. <https://www.sciencedirect.com/science/article/pii/S1746068919301294>
- Adam, K., & Oswald, I. (1984). Sleep helps healing. *British Medical Journal (Clinical research ed.)*, 289(6456), 1400. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1443671/>
- Adler, R. H. (2022). Trustworthiness in qualitative research. *Journal of Human Lactation*, 38(4), 598-602. <https://doi.org/10.1177/08903344221116620>
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 2, 100051. <https://www.sciencedirect.com/science/article/pii/S2949916X24000045>
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 2, 100051. <https://doi.org/10.1016/j.glmedi.2024.100051>
- Ahmed, S. K., Mohammed, R. A., Nashwan, A. J., Ibrahim, R. H., Abdalla, A. Q., M. Ameen, B. M., & Khdir, R. M. (2025). Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 6, 100198. <https://doi.org/10.1016/j.glmedi.2025.100198>
- Ajimsha, M. S., Shenoy, P. D., & Gampawar, N. (2020). Role of fascial connectivity in musculoskeletal dysfunctions: A narrative review. *Journal of Bodywork and Movement Therapies*, 24(4), 423-431. <https://www.sciencedirect.com/science/article/pii/S1360859220301480>
- Alarie, S., & Lupien, S. J. (2021). Self-selection bias in human stress research: a systematic review. *Psychoneuroendocrinology*, 131, 105514. <https://doi.org/10.1016/j.psyneuen.2021.105514>
- Albert, H. B., Godskesen, M., Korsholm, L., & Westergaard, J. G. (2006). Risk factors in developing pregnancy-related pelvic girdle pain. *Acta Obstetrica et Gynecologica Scandinavica*, 85(5), 539-544. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1080/00016340600578415>
- Albert, H., Godskesen, M., & Westergaard, J. (2001). Prognosis in four syndromes of pregnancy-related pelvic pain. *Acta Obstetrica et Gynecologica Scandinavica*, 80(6), 505-510. <https://www.tandfonline.com/doi/abs/10.1080/j.1600-0412.2001.080006505.x>

Al-Busaidi, Z. Q. (2008). Qualitative research and its uses in health care. *Sultan Qaboos University Medical Journal*, 8(1), 11–19. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3087733/>

Alder, J., Fink, N., Bitzer, J., Hösli, I., & Holzgreve, W. (2007). Depression and anxiety during pregnancy: a risk factor for obstetric, fetal and neonatal outcome? A critical review of the literature. *Journal of Maternal-Fetal & Neonatal Medicine*, 20(3), 189-209. <https://doi.org/10.1080/14767050701209560>

Alexanderson, K. (1998). Sickness absence: a review of performed studies with focused on levels of exposures and theories utilized. *Scandinavian Journal of Social Medicine*, 26(4), 241-249. <https://journals.sagepub.com/doi/abs/10.1177/14034948980260040301>

Al-Obaidi, S. M., Nelson, R. M., Al-Awadhi, S., & Al-Shuwaie, N. (2000). The role of anticipation and fear of pain in the persistence of avoidance behavior in patients with chronic low back pain. *Spine*, 25(9), 1126-1131. https://journals.lww.com/spinejournal/fulltext/2000/05010/The_Role_of_Anticipation_and_Fear_of_Pain_in_the.14.aspx

American Osteopathic Association. (2016). *Tenets of Osteopathic Medicine*. AOA. <https://osteopathic.org/about/leadership/aoa-governance-documents/tenets-of-osteopathic-medicine/>

American Psychological Association, Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist*, 61(4), 271–285

Anderson, S., Allen, P., Peckham, S., & Goodwin, N. (2008). Asking the right questions: scoping studies in the commissioning of research on the organisation and delivery of health services. *Health research policy and systems*, 6(1), 7. <https://doi.org/10.1186/1478-4505-6-7>

Andersson, G. B. (1999). Epidemiological features of chronic low-back pain. *The Lancet (British Edition)*, 354(9178), 581–585. [https://doi.org/10.1016/S0140-6736\(99\)01312-4](https://doi.org/10.1016/S0140-6736(99)01312-4)

Andersson, G. B., Lucente, T., Davis, A. M., Kappler, R. E., Lipton, J. A., & Leurgans, S. (1999). A comparison of osteopathic spinal manipulation with standard care for patients with low back pain. *New England Journal of Medicine*, 341(19), 1426-1431. <https://www.nejm.org/doi/abs/10.1056/NEJM199911043411903>

Andersson, H. I., Ejlertsson, G., Leden, I., & Rosenberg, C. (1993). Chronic pain in a geographically defined general population: studies of differences in age, gender, social class, and pain localization.

The Clinical Journal of Pain, 9(3), 174-182.
https://journals.lww.com/clinicalpain/abstract/1993/09000/chronic_pain_in_a_geographically_defined_general.4.aspx

Aronson, J. (1994). Pragmatic view of thematic analysis. *The Qualitative Report*, 2(1), 1–3.
<https://pdfs.semanticscholar.org/27a4/1900f576f6d61f6203bf7d050d79c3bb6327.pdf>

ASA. (2022). *Health: Osteopathy*. <https://www.asa.org.uk/advice-online/health-osteopathy.html#2>

Assendelft, W. J., Morton, S. C., Yu, E. I., Suttorp, M. J., Shekelle, P. G., & Rubinstein, S. M. (2013). Spinal manipulative therapy for low-back pain. *Cochrane Library*, 2013(1), 1465-1858.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000447.pub2/abstract>

Aure, O. F., Nilsen, J. H., & Vasseljen, O. (2003). Manual therapy and exercise therapy in patients with chronic low back pain: a randomized, controlled trial with 1-year follow-up. *Spine*, 28(6), 525-531.
https://journals.lww.com/spinejournal/fulltext/2003/03150/Manual_Therapy_and_Exercise_Therapy_in_Patients.2.aspx

Aylward, M., Phillips, C., & Howson, H. (2013). Simply Prudent Healthcare—achieving better care and value for money in Wales—discussion paper. *The Bevan Commission, Cardiff*.
<https://bevancommission.org/wp-content/uploads/2023/09/Simply-prudent-healthcare.pdf>

Babatunde, F., MacDermid, J., & MacIntyre, N. (2017). Characteristics of therapeutic alliance in musculoskeletal physiotherapy and occupational therapy practice: a scoping review of the literature. *BMC Health Services Research*, 17(1), 375. <https://doi.org/10.1186/s12913-017-2311-3>

Bailey, J. R., Ford, C. M., & Raelin, J. D. (2009). Philosophical Ties That Bind Practice: The Case of Creativity. *Journal of Management Inquiry*, 18(1), 27–38. <https://doi.org/10.1177/1056492608318151>

Baker, A. (2001). Crossing the quality chasm: a new health system for the 21st century. *British Medical Journal Publishing Group*, 323(7322), 1192.
<https://www.bmj.com/content/323/7322/1192.1?variant=full-text>

Balagué, F., Mannion, A. F., Pellisé, F., & Cedraschi, C. (2012). Non-specific low back pain. *The lancet*, 379(9814), 482-491. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(11\)60610-7/abstract?rss=yes&TB_iframe=true&width=850&keepThis=true&height=650](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(11)60610-7/abstract?rss=yes&TB_iframe=true&width=850&keepThis=true&height=650)

- Baldwin, S. A., Wampold, B. E., & Imel, Z. E. (2007). Untangling the alliance-outcome correlation: exploring the relative importance of therapist and patient variability in the alliance. *Journal of Consulting and Clinical Psychology*, 75(6), 842. <https://doi.org/10.1037/0022-006X.75.6.842>
- Balint, E. (1969). The possibilities of patient-centered medicine. *The Journal of the Royal College of General Practitioners*, 17(82), 269. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2236836/>
- Balthazard, P., de Goumoens, P., Rivier, G., Demeulenaere, P., Ballabeni, P., & Dériaz, O. (2012). Manual therapy followed by specific active exercises versus a placebo followed by specific active exercises on the improvement of functional disability in patients with chronic non specific low back pain: a randomized controlled trial. *BMC Musculoskeletal Disorders*, 13, 1-11. <https://link.springer.com/article/10.1186/1471-2474-13-162>
- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, 1(2), 164-180. <https://journals.sagepub.com/doi/abs/10.1111/j.1745-6916.2006.00011.x>
- Banning, A., & Pollard, C. (2020). Current evidence supporting physiotherapy treatment for women with low back pain or lumbopelvic pain during pregnancy. *Journal of Pelvic, Obstetric and Gynaecological Physiotherapy*, 126, 29-37. https://ppa.csp.org.uk/system/files/documents/2020-01/07_banning_pollard.pdf
- Barat, S., Ghanbarpour, A., Mirtabar, S. M., Kheirkhah, F., Basirat, Z., Shirafkan, H., ... & Faramarzi, M. (2023). Psychological distress in pregnancy and postpartum: a cross-sectional study of Babol pregnancy mental health registry. *BMC Pregnancy and Childbirth*, 23(1), 793. <https://link.springer.com/article/10.1186/s12884-023-06024-3>
- Barbour, R. (2007). *Doing focus groups*. Sage Publications.
- Barrett, D., & Heale, R. (2020). What are Delphi studies? *Evidence-Based Nursing*, 23(3), 68–69. <https://doi.org/10.1136/ebnurs-2020-103303>
- Bartz, R. (1999). Beyond the biopsychosocial model. *The Journal of Family Practice*, 48(8), 601-606. https://www.academia.edu/download/87513085/JFP_1999_01_vX_iX_beyond_the_biopsychosocial_model.pdf
- Bayrampour, H., Salmon, C., Vinturache, A., & Tough, S. (2015). Effect of depressive and anxiety symptoms during pregnancy on risk of obstetric interventions. *The Journal of Obstetrics and Gynaecology Research*, 41(7), 1040–1048. <https://doi.org/10.1111/jog.12683>

Beach, M. C., Inui, T., & Relationship-Centered Care Research Network. (2006). Relationship-centered care: A constructive reframing. *Journal of General Internal Medicine*, 21, 3-8. <https://link.springer.com/article/10.1111/j.1525-1497.2006.00302.x>

Beales, D., Lutz, A., Thompson, J., Wand, B. M., & O'Sullivan, P. (2016). Disturbed body perception, reduced sleep, and kinesiophobia in subjects with pregnancy-related persistent lumbopelvic pain and moderate levels of disability: an exploratory study. *Manual Therapy*, 21, 69-75. <https://www.sciencedirect.com/science/article/pii/S1356689X15001071>

Beales, D., Lutz, A., Thompson, J., Wand, B. M., & O'Sullivan, P. (2016). Disturbed body perception, reduced sleep, and kinesiophobia in subjects with pregnancy-related persistent lumbopelvic pain and moderate levels of disability: an exploratory study. *Manual Therapy*, 21, 69-75. <https://doi.org/10.1016/j.math.2015.04.016>

Beck, C. T. (2001). Predictors of postpartum depression: an update. *Nursing Research*, 50(5), 275-285. [https://journals.lww.com/nursingresearchonline/fulltext/2001/09000/A Meta Analysis of the Relationship Between.4.aspx](https://journals.lww.com/nursingresearchonline/fulltext/2001/09000/A_Meta_Analysis_of_the_Relationship_Between.4.aspx)

Beck, C. T. (2002). Revision of the postpartum depression predictors inventory. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 31(4), 394-402. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1552-6909.2002.tb00061.x>

Bednarz, D. (1985). Quantity and quality in evaluation research: A divergent view. *Evaluation and Program Planning*, 8(4), 289-306. https://www.academia.edu/download/47836460/0149-7189_2885_2990024-220160806-15663-s0sq0v.pdf

Beeston, S., & Simons, H. (1996). Physiotherapy practice: practitioners' perspectives. *Physiotherapy Theory and Practice*, 12(4), 231-242. <https://www.tandfonline.com/doi/abs/10.3109/09593989609036440>

Bell, G. K., Kidd, D., & North, R. B. (1997). Cost-effectiveness analysis of spinal cord stimulation in treatment of failed back surgery syndrome. *Journal of Pain and Symptom Management*, 13(5), 286-295. <https://www.sciencedirect.com/science/article/pii/S0885392496003235>

Benoist, J. (2003). Husserl and Bonzano. In M. T. Tymienicka (Ed.), *Phenomenology world-wide. Foundations-expanding dynamics-life-engagements. A guide for research and study* (pp. 94-97). London: Kluwer Academic

Benyamini, Y., Molcho, M. L., Dan, U., Gozlan, M., & Preis, H. (2017). Women's attitudes towards the medicalization of childbirth and their associations with planned and actual modes of birth. *Women and Birth: Journal of the Australian College of Midwives*, 30(5), 424–430. <https://www.sciencedirect.com/science/article/pii/S1871519217300471>

Berezin, D. (1954). Pelvic insufficiency during pregnancy and after parturition: a clinical study. *Acta Obstetrica et Gynecologica Scandinavica*, 33(3), 1-119. <https://www.tandfonline.com/doi/pdf/10.3109/00016345409154960>

Berg, G., Hammar, M., Möller-Nielsen, J., Lindén, U., & Thorblad, J. (1988). Low back pain during pregnancy. *Obstetric Anesthesia Digest*, 8(2), 53. https://journals.lww.com/obstetricanesthesia/abstract/1988/07000/low_back_pain_during_pregnancy.2.aspx

Berg, M., & Dahlberg, K. (1998). A phenomenological study of women's experiences of complicated childbirth. *Midwifery*, 14(1), 23-29. <https://www.sciencedirect.com/science/article/pii/S0266613898901115>

Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research: QR*, 15(2), 219–234. <https://journals.sagepub.com/doi/abs/10.1177/1468794112468475>

Bergna, A., Galli, M., Todisco, F., & Berti, F. (2022). Beliefs and use of palpatory findings in osteopathic clinical practice: a qualitative descriptive study among Italian osteopaths. In *Healthcare*, 10(9), 1647. <https://www.mdpi.com/2227-9032/10/9/1647>

Bergna, A., Vismara, L., Parravicini, G., & Dal Farra, F. (2020). A new perspective for somatic dysfunction in osteopathy: the variability model. *Journal of Bodywork and Movement Therapies*, 24(3), 181-189. <https://www.sciencedirect.com/science/article/pii/S1360859220300607>

Bergström, C., Persson, M., & Mogren, I. (2014). Pregnancy-related low back pain and pelvic girdle pain approximately 14 months after pregnancy—pain status, self-rated health and family situation. *BMC Pregnancy and Childbirth*, 14(1), 48. <https://doi.org/10.1186/1471-2393-14-48>

Bergström, C., Persson, M., & Mogren, I. (2016). Sick leave and healthcare utilisation in women reporting pregnancy related low back pain and/or pelvic girdle pain at 14 months postpartum. *Chiropractic & Manual Therapies*, 24(1), 7. <https://doi.org/10.1186/s12998-016-0088-9>

- Berry, J. A. (2009). Nurse practitioner/patient communication styles in clinical practice. *Journal for Nurse Practitioners*, 5(7), 508–515. <https://doi.org/10.1016/j.nurpra.2009.02.019>
- Bewyer, K. J., Bewyer, D. C., Messenger, D., & Kennedy, C. M. (2009). Pilot data: association between gluteus medius weakness and low back pain during pregnancy. *The Iowa Orthopaedic Journal*, 29, 97. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2723701/>
- Bialosky, J. E., Beneciuk, J. M., Bishop, M. D., Coronado, R. A., Penza, C. W., Simon, C. B., & George, S. Z. (2018). Unravelling the mechanisms of manual therapy: modelling an approach. *The Journal of Orthopaedic and Sports Physical Therapy*, 48(1), 8–18. <https://doi.org/10.2519/jospt.2018.7476>
- Biggerstaff, D., & Thompson, A. R. (2008). Interpretative phenomenological analysis (IPA): A qualitative methodology of choice in healthcare research. *Qualitative research in psychology*, 5(3), 214–224. <https://www.tandfonline.com/doi/abs/10.1080/14780880802314304>
- Birtwell, B., Hammond, L., & Puckering, C. (2015). ‘Me and my Bump’: an interpretative phenomenological analysis of the experiences of pregnancy for vulnerable women. *Clinical Child Psychology and Psychiatry*, 20(2), 218–238. <https://journals.sagepub.com/doi/abs/10.1177/1359104513506427>
- Bissell, P., May, C. R., & Noyce, P. R. (2004). From compliance to concordance: barriers to accomplishing a re-framed model of health care interactions. *Social Science & Medicine* (1982), 58(4), 851–862
- Bohlen, L., Shaw, R., Cerritelli, F., & Esteves, J. E. (2021). Osteopathy and mental health: an embodied, predictive, and interoceptive framework. *Frontiers in Psychology*, 12, 767005. <https://doi.org/10.3389/fpsyg.2021.767005>
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice*, 16(3), 252. <https://psycnet.apa.org/journals/pst/16/3/252/>
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice*, 16(3), 252. <https://doi.org/10.1037/h0085885>
- Borg-Stein, J., Dugan, S. A., & Gruber, J. (2005). Musculoskeletal aspects of pregnancy. *American Journal of Physical Medicine & Rehabilitation*, 84(3), 180–192. https://journals.lww.com/ajpmr/fulltext/2005/03000/Musculoskeletal_Aspects_of_Pregnancy.6.aspx

Bortz II, W. M. (1984). The disuse syndrome. *Western Journal of Medicine*, 141(5), 691. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1011199/>

Bourke, E., Barker, C., & Fornells-Ambrojo, M. (2021). Systematic review and meta-analysis of therapeutic alliance, engagement, and outcome in psychological therapies for psychosis. *Psychology and Psychotherapy: Theory, Research and Practice*, 94(3), 822-853. <https://doi.org/10.1111/papt.12330>

Bousema, E. J., Verbunt, J. A., Seelen, H. A., Vlaeyen, J. W., & Knottnerus, J. A. (2007). Disuse and physical deconditioning in the first year after the onset of back pain. *Pain*, 130(3), 279-286. <https://www.sciencedirect.com/science/article/pii/S0304395907001388>

Bouwmeester, W., van Enst, A., & van Tulder, M. (2009). Quality of low back pain guidelines improved. *Spine*, 34(23), 2562-2567. https://journals.lww.com/spinejournal/fulltext/2009/11010/quality_of_low_back_pain_guidelines_improved.15.aspx

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage Publications.

Bradizza, C. M., Brown, W. C., Ruszczyk, M. U., Dermen, K. H., Lucke, J. F., & Stasiewicz, P. R. (2018). Difficulties in emotion regulation in treatment-seeking alcoholics with and without co-occurring mood and anxiety disorders. *Addictive Behaviours*, 80, 6-13. <https://www.sciencedirect.com/science/article/pii/S0306460317304987>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589-597. <https://www.tandfonline.com/doi/abs/10.1080/2159676X.2019.1628806>

Braun, V., & Clarke, V. (2022). Conceptual and design thinking for thematic analysis. *Qualitative Psychology*, 9(1), 3-26. <https://psycnet.apa.org/journals/qua/9/1/3/>

Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and becoming a knowing researcher. *International Journal of Transgender Health*, 24(1), 1-6. <https://doi.org/10.1080/26895269.2022.2129597>

Brekke, I., Richardsen, K. R., & Jenum, A. K. (2019). Sickness absence in pregnancy and sedentary behavior: a population-based cohort study from Norway. *BMC Public Health*, 19(1), 71. <https://doi.org/10.1186/s12889-018-6379-4>

Brocki, J. M., & Wearden, A. J. (2006). A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology. *Psychology and Health*, 21(1), 87-108. <https://www.tandfonline.com/doi/abs/10.1080/14768320500230185>

Bronfort, G., Haas, M., Evans, R. L., & Bouter, L. M. (2004). Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. *The Spine Journal*, 4(3), 335-356. <https://www.sciencedirect.com/science/article/pii/S1529943003001773>

Brown, A., & Johnston, R. (2013). Maternal experience of musculoskeletal pain during pregnancy and birth outcomes: significance of lower back and pelvic pain. *Midwifery*, 29(12), 1346-1351. <https://www.sciencedirect.com/science/article/pii/S0266613813000107>

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822. <https://psycnet.apa.org/journals/psp/84/4/822.html?uid=2003-02410-012>

Brown, S., & Lumley, J. (1998). Maternal health after childbirth: results of an Australian population based survey. *BJOG: An International Journal of Obstetrics & Gynaecology*, 105(2), 156-161. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/j.1471-0528.1998.tb10045.x>

Brubaker, S. J., & Dillaway, H. E. (2009). Medicalization, natural childbirth and birthing experiences. *Sociology Compass*, 3(1), 31-48. <https://compass.onlinelibrary.wiley.com/doi/abs/10.1111/j.1751-9020.2008.00183.x>

Brynhildsen, J., Hansson, Å., Persson, A., & Hammar, M. (1998). Follow-up of patients with low back pain during pregnancy. *Obstetrics & Gynecology*, 91(2), 182-186. https://journals.lww.com/greenjournal/abstract/1998/02000/follow_up_of_patients_with_low_back_pain_during.5.aspx

Buckle, P. W., & Devereux, J. J. (2002). The nature of work-related neck and upper limb musculoskeletal disorders. *Applied Ergonomics*, 33(3), 207-217. <https://www.sciencedirect.com/science/article/pii/S0003687002000145>

Buer, N., & Linton, S. J. (2002). Fear-avoidance beliefs and catastrophizing: occurrence and risk factor in back pain and ADL in the general population. *Pain*, 99(3), 485-491. https://journals.lww.com/pain/fulltext/2002/10000/fear_avoidance_beliefs_and_catastrophizing_.13.aspx

Buin, L., Joaquim, R. H. V. T., Strong, J., & Robinson, K. (2024). The experience of pregnancy-related lumbopelvic pain: a qualitative evidence synthesis. *Canadian Journal of Occupational Therapy*, 91(1), 29-43. <https://doi.org/10.1177/00084174231172037>

Burke, J. G., Watson, R. W. G., McCormack, D. R. W. G., Dowling, F. E., Walsh, M. G., & Fitzpatrick, J. M. (2002). Intervertebral discs which cause low back pain secrete high levels of proinflammatory mediators. *The Journal of Bone & Joint Surgery British Volume*, 84(2), 196-201. <https://boneandjoint.org.uk/article/10.1302/0301-620X.84B2.0840196>

Burns, J. W., & Evon, D. (2007). Common and Specific Process Factors in Cardiac Rehabilitation: Independent and Interactive Effects of the Working Alliance and Self-Efficacy. *Health Psychology*, 26(6), 684–692 <https://psycnet.apa.org/record/2007-16656-005>

Burns, P. B., Rohrich, R. J., & Chung, K. C. (2011). The levels of evidence and their role in evidence-based medicine. *Plastic and Reconstructive Surgery*, 128(1), 305-310. https://journals.lww.com/plasreconsurg/fulltext/2011/07000/the_levels_of_evidence_and_their_role_in.46.aspx

Burt, V. K., & Stein, K. (2002). Epidemiology of depression throughout the female life cycle. *Journal of Clinical Psychiatry*, 63, 9-15. <https://www.psychiatrist.com/read-pdf/6513/>

Burton, A. K. (2004). United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: cost effectiveness of physical treatments for back pain in primary care. *British Medical Journal*, 329(7479), 1381-1385.

Byrne, J. A. (2016). Improving the peer review of narrative literature reviews. *Research Integrity and Peer Review*, 1(1), Article 12. <https://doi.org/10.1186/s41073-016-0019-2>

Cameron, L. J., Somerville, L. M., Naismith, C. E., Watterson, D., Maric, V., & Lannin, N. A. (2018). A qualitative investigation into the patient-centered goal-setting practices of allied health clinicians working in rehabilitation. *Clinical Rehabilitation*, 32(6), 827–840. <https://doi.org/10.1177/0269215517752488>

Cameron, S. K., Rodgers, J., & Dagnan, D. (2018). The relationship between the therapeutic alliance and clinical outcomes in cognitive behaviour therapy for adults with depression: A meta-analytic review. *Clinical Psychology & Psychotherapy*, 25(3), 446-456. <https://doi.org/10.1002/cpp.2180>

Campbell, R. (2001). Heidegger: Truth as Aletheia. In R. Small (Ed.), *A hundred years of phenomenology: Perspectives on a philosophical tradition* (pp. 73-89). Burlington, VT: Ashgate.

Cândeă, D. M., & Szentagotai-Tătar, A. (2018). Shame-proneness, guilt-proneness and anxiety symptoms: A meta-analysis. *Journal of Anxiety Disorders*, 58, 78-106. <https://www.sciencedirect.com/science/article/pii/S0887618517303754>

Carey, T. S., Garrett, J., Jackman, A., McLaughlin, C., Fryer, J., Smucker, D. R., & North Carolina Back Pain Project. (1995). The outcomes and costs of care for acute low back pain among patients seen by primary care practitioners, chiropractors, and orthopedic surgeons. *New England Journal of Medicine*, 333(14), 913-917. <https://www.nejm.org/doi/abs/10.1056/NEJM199510053331406>

Carnes, D., Plunkett, A., Ellwood, J., & Miles, C. (2018). Manual therapy for unsettled, distressed and excessively crying infants: a systematic review and meta-analyses. *BMJ open*, 8(1), e019040. <https://bmjopen.bmj.com/content/8/1/e019040.abstract>

Carradice, A., Shankland, M. C., & Beail, N. (2002). A qualitative study of the theoretical models used by UK mental health nurses to guide their assessments with family caregivers of people with dementia. *International Journal of Nursing Studies*, 39(1), 17-26. <https://www.sciencedirect.com/science/article/pii/S0020748901000086>

Cassidy, E. L., Atherton, R. J., Robertson, N., Walsh, D. A., & Gillett, R. (2012). Mindfulness, functioning and catastrophizing after multidisciplinary pain management for chronic low back pain. *Pain*, 153(3), 644-650. <https://www.sciencedirect.com/science/article/pii/S0304395911007032>

Cassidy, J. D., Côté, P., Carroll, L. J., & Kristman, V. (2005). Incidence and course of low back pain episodes in the general population. *Spine*, 30(24), 2817-2823. [https://journals.lww.com/spinejournal/fulltext/2005/12150/Incidence and Course of Low Back Pain Episodes in.21.aspx](https://journals.lww.com/spinejournal/fulltext/2005/12150/Incidence_and_Course_of_Low_Back_Pain_Episodes_in.21.aspx)

Ceprnja, D., Chipchase, L., Liamputtong, P., & Gupta, A. (2022). "This is hard to cope with": the lived experience and coping strategies adopted amongst Australian women with pelvic girdle pain in pregnancy. *BMC Pregnancy and Childbirth*, 22(1), 96–96. [https://doi.org/10.1186/s12884-022-04426-](https://doi.org/10.1186/s12884-022-04426-3)

Ceprnja, D., Chipchase, L., Liamputtong, P., & Gupta, A. (2022). "This is hard to cope with": the lived experience and coping strategies adopted amongst Australian women with pelvic girdle pain in pregnancy. *BMC Pregnancy and Childbirth*, 22(1), 96. <https://link.springer.com/article/10.1186/s12884-022-04426-3>

Cerritelli, F., Chiacchiaretta, P., Gambi, F., Perrucci, M. G., Barassi, G., Visciano, C., ... & Ferretti, A. (2020). Effect of manual approaches with osteopathic modality on brain correlates of interoception: an fMRI study. *Scientific Reports*, 10(1), 3214. <https://www.nature.com/articles/s41598-020-60253-6>

Chaves, J. F., & Brown, J. M. (1987). Spontaneous cognitive strategies for the control of clinical pain and stress. *Journal of Behavioral Medicine*, 10, 263-276. <https://link.springer.com/article/10.1007/BF00846540>

Chen, W. G., Schloesser, D., Arensdorf, A. M., Simmons, J. M., Cui, C., Valentino, R., ... & Langevin, H. M. (2021). The emerging science of interoception: sensing, integrating, interpreting, and regulating signals within the self. *Trends in Neurosciences*, 44(1), 3-16. [https://www.cell.com/trends/neurosciences/fulltext/S0166-2236\(20\)30238-1](https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(20)30238-1)

Cheung, K. M., Karppinen, J., Chan, D., Ho, D. W., Song, Y. Q., Sham, P., ... & Luk, K. D. (2009). Prevalence and pattern of lumbar magnetic resonance imaging changes in a population study of one thousand forty-three individuals. *Spine*, 34(9), 934-940. https://journals.lww.com/spinejournal/fulltext/2009/04200/Low_Back_Pain_in_Relation_to_Lumbar_Disc.00012.aspx

Chiarotto, A., Maxwell, L. J., Terwee, C. B., Wells, G. A., Tugwell, P., & Ostelo, R. W. (2016). Roland-Morris Disability Questionnaire and Oswestry Disability Index: which has better measurement properties for measuring physical functioning in nonspecific low back pain? Systematic review and meta-analysis. *Physical Therapy*, 96(10), 1620-1637. <https://academic.oup.com/ptj/article-abstract/96/10/1620/2870251>

Chibnall, J. T., & Tait, R. C. (1995). Observer perceptions of low Back pain: Effects of pain report and other contextual factors 1. *Journal of Applied Social Psychology*, 25(5), 418-439. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1559-1816.1995.tb01597.x>

Chila, A. G., Carreiro, J. E., Dowling, D. J., Gamber, R. G., Glover, J., Habenicht, A. L., Jerome, J. A., Patterson, M. M., Rogers, F. J., Seffinger, M. A., & Willard, F. H. (2011). *Foundations of osteopathic medicine* (3rd ed.). Wolters Kluwer Health/Lippincott Williams & Wilkins.

Chown, M., Whittamore, L., Rush, M., Allan, S., Stott, D., & Archer, M. (2008). A prospective study of patients with chronic back pain randomised to group exercise, physiotherapy or osteopathy. *Physiotherapy*, 94(1), 21-28.
<https://www.sciencedirect.com/science/article/pii/S0031940607001265>

Ciarrochi, J., & Bilich, L. (2006). Acceptance and commitment therapy. Measures package. *Unpublished manuscript*, University of Wollongong, Wollongong, Australia.
https://www.ueb.ro/psihologie/files/Psihologie_pozitiva_teste_si_scale.pdf

Clare, L. (2003). Managing threats to self: awareness in early stage Alzheimer's disease. *Social Science & Medicine*, 57(6), 1017-1029.
<https://www.sciencedirect.com/science/article/pii/S0277953602004768>

Cleland, J., Conde-Agudelo, A., Peterson, H., Ross, J., & Tsui, A. (2012). Contraception and health. *The Lancet*, 380(9837), 149-156. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)60609-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)60609-6/fulltext)

Close, C., Sinclair, M., Liddle, D., Mc Cullough, J., & Hughes, C. (2016). Women's experience of low back and/or pelvic pain (LBPP) during pregnancy. *Midwifery*, 37, 1-8.
<https://www.sciencedirect.com/science/article/pii/S0266613816300171>

Cochrane Back and Neck Group, Cashin, A. G., Rizzo, R. R., Wand, B. M., O'Connell, N. E., Lee, H., ... & McAuley, J. H. (1996). Non-pharmacological and non-surgical treatments for low back pain in adults: an overview of Cochrane Reviews. *Cochrane Database of Systematic Reviews*, 2021(8).
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD014691/abstract>

Coia, P., & Morley, S. (1998). Medical reassurance and patients' responses. *Journal of Psychosomatic Research*, 45(5), 377–386. [https://doi.org/10.1016/S0022-3999\(98\)00047-6](https://doi.org/10.1016/S0022-3999(98)00047-6)

Collins, J. A., & Fauser, B. C. (2005). Balancing the strengths of systematic and narrative reviews. *Human Reproduction Update*, 11(2), 103-104. <https://doi.org/10.1093/humupd/dmh058>

Cooper, P., Diamond, I., & High, S. (1993). Choosing and using contraceptives: integrating qualitative and quantitative research methods in family planning. *Market Research Society. Journal.*, 35(4), 1-14.
<https://journals.sagepub.com/doi/abs/10.1177/147078539303500403>

Cortini, M., Galanti, T., & Fantinelli, S. (2019). Focus group discussion: How many participants in a group?. *Encyclopaideia*, 23(54), 29-43. <https://hdl.handle.net/11564/711049>

- Costa, E. C., Vale, S., Sobral, M., & Graça Pereira, M. (2016). Illness perceptions are the main predictors of depression and anxiety symptoms in patients with chronic pain. *Psychology, Health & Medicine*, 21(4), 483-495. <https://www.tandfonline.com/doi/abs/10.1080/13548506.2015.1109673>
- Costa, L. D. C. M., Maher, C. G., Hancock, M. J., McAuley, J. H., Herbert, R. D., & Costa, L. O. (2012). The prognosis of acute and persistent low-back pain: a meta-analysis. *Canadian Medical Association Journal*, 184(11), E613-E624. <https://www.cmaj.ca/content/184/11/E613.short>
- Costa, L. D. C. M., Maher, C. G., McAuley, J. H., Hancock, M. J., Herbert, R. D., Refshauge, K. M., & Henschke, N. (2009). Prognosis for patients with chronic low back pain: inception cohort study. *British Medical Journal*, 339(3829). <https://www.bmj.com/content/bmj/339/bmj.b3829.full.pdf>
- Cotton, A. (2013). Osteopathic principles in the modern world. *International Journal of Osteopathic Medicine*, 16(1), 17–24. <https://doi.org/10.1016/j.ijosm.2012.10.002>
- Craig, A. D. (2009). Emotional moments across time: a possible neural basis for time perception in the anterior insula. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1525), 1933-1942. <https://royalsocietypublishing.org/doi/abs/10.1098/rstb.2009.0008>
- Crawford, P., Brown, B., Kvangarsnes, M., & Gilbert, P. (2014). The design of compassionate care. *Journal of Clinical Nursing*, 23(23–24), 3589–3599. <https://doi.org/10.1111/jocn.12632>
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.
- Crisson, J. E., & Keefe, F. J. (1988). The relationship of locus of control to pain coping strategies and psychological distress in chronic pain patients. *Pain*, 35(2), 147-154. <https://www.sciencedirect.com/science/article/pii/0304395988902229>
- Croft, P. R., Papageorgiou, A. C., Ferry, S., Thomas, E., Jayson, M. I., & Silman, A. J. (1995). Psychologic distress and low back pain: evidence from a prospective study in the general population. *Spine*, 20(24), 2731-2737. https://journals.lww.com/spinejournal/abstract/1995/12150/psychologic_distress_and_low_back_pain_evidence.15.aspx
- Crombez, G., Eccleston, C., Van Damme, S., Vlaeyen, J. W., & Karoly, P. (2012). Fear-avoidance model of chronic pain: the next generation. *The Clinical journal of pain*, 28(6), 475-483.

https://journals.lww.com/clinicalpain/fulltext/2012/07000/Fear_Avoidance_Model_of_Chronic_Pain_The_Next.3.aspx

Crombez, G., Vlaeyen, J. W. S., Heuts, P. H. T. G., & Lysens, R. (1999). Pain-related fear is more disabling than pain itself: evidence on the role of pain-related fear in chronic back pain disability. *Pain (Amsterdam)*, 80(1), 329–339. [https://doi.org/10.1016/S0304-3959\(98\)00229-2](https://doi.org/10.1016/S0304-3959(98)00229-2)

Cross, M. J., March, L. M., Lapsley, H. M., Byrne, E., & Brooks, P. M. (2006). Patient self-efficacy and health locus of control: relationships with health status and arthritis-related expenditure. *Rheumatology*, 45(1), 92-96. <https://academic.oup.com/rheumatology/article-abstract/45/1/92/1788602>

Crowe, M., Whitehead, L., Gagan, M. J., Baxter, G. D., Pankhurst, A., & Valledor, V. (2010). Listening to the body and talking to myself—the impact of chronic lower back pain: A qualitative study. *International Journal of Nursing Studies*, 47(5), 586-592. <https://www.sciencedirect.com/science/article/pii/S0020748909003198>

Crowther, D. M. (2013). A clinician's guide to systematic reviews. *Nutrition in Clinical Practice*, 28(4), 459–462. <https://doi.org/10.1177/0884533613490742>

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Basic Books.

D'alessandro, G., Cerritelli, F., & Cortelli, P. (2016). Sensitization and interoception as key neurological concepts in osteopathy and other manual medicines. *Frontiers in neuroscience*, 10, 100. <https://doi.org/10.3389/fnins.2016.00100>

Damen, L., Buyruk, H. M., Güler-Uysal, F., Lotgering, F. K., Snijders, C. J., & Stam, H. J. (2002). The prognostic value of asymmetric laxity of the sacroiliac joints in pregnancy-related pelvic pain. *Spine*, 27(24), 2820-2824. https://journals.lww.com/spinejournal/fulltext/2002/12150/the_prognostic_value_of_asymmetric_laxity_of_the.18.aspx

Darnall, B. D., & Colloca, L. (2018). Optimizing placebo and minimizing nocebo to reduce pain, catastrophizing, and opioid use: a review of the science and an evidence-informed clinical toolkit. In L. Colloca (Ed.), *International Review of Neurobiology*, (pp. 129-157). Academic Press.

De Campora, G., & Zavattini, G. C. (Eds.). (2021). *Mindfulness and Eating Disorders Across the Lifespan: Assessment and Intervention Through the Emotion Regulation Paradigm*. Routledge.

de Haan, S. (2020). An enactive approach to psychiatry. *Philosophy, Psychiatry, & Psychology*, 27(1), 3-25. <https://muse.jhu.edu/pub/1/article/751748/summary>

de Haan, S. (2021). Bio-psycho-social interaction: an enactive perspective. *International Review of Psychiatry*, 33(5), 471-477. <https://www.tandfonline.com/doi/abs/10.1080/09540261.2020.1830753>

de Haes, H., & Koedoot, N. (2003). Patient centered decision making in palliative cancer treatment: a world of paradoxes. *Patient Education and Counselling*, 50(1), 43-49. <https://www.sciencedirect.com/science/article/pii/S073839910300079X>

De Smet, A. A., Fisher, D. R., Heiner, J. P., & Keene, J. S. (1990). Magnetic resonance imaging of muscle tears. *Skeletal Radiology*, 19, 283-286. <https://link.springer.com/article/10.1007/BF00191673>

De Souza, L. H., & Frank, A. O. (2000). Subjective pain experience of people with chronic back pain. *Physiotherapy Research International: The Journal for Researchers and Clinicians in Physical Therapy*, 5(4), 207-219. <https://onlinelibrary.wiley.com/doi/abs/10.1002/pri.201>

Demirgüneş, B. K. (2015). Relative importance of perceived value, satisfaction and perceived risk on willingness to pay more. *International Review of Management and Marketing*, 5(4), 211-220. <https://dergipark.org.tr/en/pub/irmm/issue/32086/355093>

Desjardins, I., Cats-Baril, W., Maruti, S., Freeman, K., & Althoff, R. (2016). Suicide risk assessment in hospitals: an expert system-based triage tool. *The Journal of Clinical Psychiatry*, 77(7), 20700.

DeStefano, L. A. (2011). *Greenman's principles of manual medicine*. Lippincott Williams & Wilkins.

Deyo, R. A., Battie, M., Beurskens, A. J. H. M., Bombardier, C., Croft, P., Koes, B., ... & Waddell, G. (1998). Outcome measures for low back pain research: a proposal for standardized use. *Spine*, 23(18), 2003-2013. https://journals.lww.com/spinejournal/fulltext/1998/09150/outcome_measures_for_low_back_pain_research_a.18.aspx

Deyo, R. A., Diehl, A. K., & Rosenthal, M. (1986). How many days of bed rest for acute low back pain?. *New England Journal of Medicine*, 315(17), 1064-1070. <https://www.nejm.org/doi/abs/10.1056/NEJM198610233151705>

Diatchenko, L., Slade, G. D., Nackley, A. G., Bhalang, K., Sigurdsson, A., Belfer, I., ... & Maixner, W. (2005). Genetic basis for individual variations in pain perception and the development of a chronic pain condition. *Human Molecular Genetics*, 14(1), 135-143. <https://academic.oup.com/hmg/article-abstract/14/1/135/2355796>

Diener, I., Kargela, M., & Louw, A. (2016). Listening is therapy: Patient interviewing from a pain science perspective. *Physiotherapy Theory and Practice*, 32(5), 356-367. <https://www.tandfonline.com/doi/abs/10.1080/09593985.2016.1194648>

Dietemann, J. L., Sick, H., Wolfram-Gabel, R., Cruz da Silva, R., Koritke, J. G., & Wackenheim, A. (1987). Anatomy and computed tomography of the normal lumbosacral plexus. *Neuroradiology*, 29, 58-68. <https://link.springer.com/article/10.1007/BF00341040>

Dietz, H. P., Eldridge, A., Grace, M., & Clarke, B. (2004). Does pregnancy affect pelvic organ mobility?. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 44(6), 517-520. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/j.1479-828X.2004.00301.x>

Dijkstra, K., & Zwaan, R. A. (2014). Memory and action. In *The Routledge handbook of embodied cognition* (pp. 296-305). Routledge.

Dixon, J. B. (2010). The effect of obesity on health outcomes. *Molecular and Cellular Endocrinology*, 316(2), 104-108. <https://www.sciencedirect.com/science/article/pii/S0303720709003645>

Dodgson, J. E. (2019). Reflexivity in qualitative research. *Journal of Human Lactation*, 35(2), 220-222. <https://doi.org/10.1177/08903344198309>

Doğru, H. Y., Özsoy, F., Doğru, S., Karaman, T., Şahin, A., Özsoy, A. Z., ... & Süren, M. (2018). Catastrophizing, depression and anxiety during pregnancy: relation between lumbopelvic pain and physical/social functioning. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 36, 119-136. <https://link.springer.com/article/10.1007/s10942-017-0277-z>

Doğru, H. Y., Özsoy, F., Doğru, S., Karaman, T., Şahin, A., Özsoy, A. Z., ... & Süren, M. (2018). Catastrophizing, depression and anxiety during pregnancy: relation between lumbopelvic pain and physical/social functioning. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 36(2), 119-136. <https://link.springer.com/article/10.1007/s10942-017-0277-z>

Domenech, J., Sánchez-Zuriaga, D., Segura-Ortí, E., Espejo-Tort, B., & Lisón, J. F. (2011). Impact of biomedical and biopsychosocial training sessions on the attitudes, beliefs, and recommendations of

health care providers about low back pain: a randomised clinical trial. *Pain*, 152(11), 2557-2563. https://journals.lww.com/pain/FullText/2011/11000/Impact_of_biomedical_and_biopsychosocial_training.18.aspx

Dowling, M. (2007). From Husserl to van Manen. A review of different phenomenological approaches. *International Journal of Nursing Studies*, 44(1), 131-142. <https://www.sciencedirect.com/science/article/pii/S0020748905002506>

Draucker, C. B. (1999). The critique of Heideggerian hermeneutical nursing research. *Journal of Advanced Nursing*, 30(2), 360–373. <https://doi.org/10.1046/j.1365-2648.1999.01091>

Duncan, G. (2000). Mind-body dualism and the biopsychosocial model of pain: what did Descartes really say?. *The Journal of Medicine and Philosophy*, 25(4), 485-513. [https://www.tandfonline.com/doi/abs/10.1076/0360-5310\(200008\)25:4;1-A;FT485](https://www.tandfonline.com/doi/abs/10.1076/0360-5310(200008)25:4;1-A;FT485)

Earle, K. M. (1951). The tract of Lissauer and its possible relation to the pain pathway.

Eaves, E. R., Sherman, K. J., Ritenbaugh, C., Hsu, C., Nichter, M., Turner, J. A., & Cherkin, D. C. (2015). A qualitative study of changes in expectations over time among patients with chronic low back pain seeking four CAM therapies. *BMC Complementary and Alternative Medicine*, 15, 1-10. <https://link.springer.com/article/10.1186/s12906-015-0531-9>

Ebel, R. L. (1961). Must all tests be valid?. *American Psychologist*, 16(10), 640. <https://psycnet.apa.org/record/1962-05654-001>

Edwards, D. J., & Toutt, C. (2018). An evaluation of osteopathic treatment on psychological outcomes with patients suffering from chronic pain: a prospective observational cohort study collected through a health and well-being academy. *Health Psychology Open*, 5(1), 2055102918774684. <https://journals.sagepub.com/doi/abs/10.1177/2055102918774684>

Ehlers, A., Clark, D. M., Dunmore, E., Jaycox, L., Meadows, E., & Foa, E. B. (1998). Predicting response to exposure treatment in PTSD: The role of mental defeat and alienation. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 11(3), 457-471. <https://onlinelibrary.wiley.com/doi/abs/10.1023/A:1024448511504>

Elden, H., Lundgren, I., & Robertson, E. (2013). Life's pregnant pause of pain: pregnant women's experiences of pelvic girdle pain related to daily life: a Swedish interview study. *Sexual & Reproductive Healthcare*, 4(1), 29-34. <https://doi.org/10.1016/j.srhc.2012.11.003>

- Ellingsen, D. M., Leknes, S., Løseth, G., Wessberg, J., & Olausson, H. (2016). The neurobiology shaping affective touch: expectation, motivation, and meaning in the multisensory context. *Frontiers in Psychology*, 6, 1986. <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.01986/full>
- Elvins, R., & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review*, 28(7), 1167–1187. <https://doi.org/10.1016/j.cpr.2008.04.002>
- Engel, G. L. (1981). The clinical application of the biopsychosocial model. *The Journal of Medicine and Philosophy*, 6(2), 101-124. <https://academic.oup.com/jmp/article-abstract/6/2/101/896145>
- Entwistle, V. A., & Watt, I. S. (2013). Treating patients as persons: a capabilities approach to support delivery of person-centered care. *The American Journal of Bioethics*, 13(8), 29-39. <https://www.tandfonline.com/doi/abs/10.1080/15265161.2013.802060>
- Enworo, O. C. (2023). Application of Guba and Lincoln's parallel criteria to assess trustworthiness of qualitative research on indigenous social protection systems. *Qualitative Research Journal*, 23(4), 372-3. <https://doi.org/10.1108/QRJ-08-2022-0116>
- Epstein, R. M., Alper, B. S., & Quill, T. E. (2004). Communicating evidence for participatory decision making. *Jama*, 291(19), 2359-2366. <https://jamanetwork.com/journals/jama/article-abstract/198765>
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26(2), 247-273. <https://doi.org/10.1080/158037042000225245>
- Esteves, J. E., Cerritelli, F., Kim, J., & Friston, K. J. (2022). Osteopathic care as (En) active inference: a theoretical framework for developing an integrative hypothesis in osteopathy. *Frontiers in Psychology*, 13, 812-926. <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.812926/full>
- Esteves, J. E., Zegarra-Parodi, R., van Dun, P., Cerritelli, F., & Vaucher, P. (2020). Models and theoretical frameworks for osteopathic care – A critical view and call for updates and research. *International Journal of Osteopathic Medicine*, 35, 1–4. <https://doi.org/10.1016/j.ijosm.2020.01.003>
- Evans, D. W. (2013). Osteopathic principles: More harm than good? *International Journal of Osteopathic Medicine*, 16(1), 46–53. <https://www.sciencedirect.com/science/article/pii/S1746068912000739>

- Evans, E. C. (2016). Exploring the Nuances of Nurse-Patient Interaction through Concept Analysis: Impact on Patient Satisfaction. *Nursing Science Quarterly*, 29(1), 62–70. <https://doi.org/10.1177/0894318415614904>
- Falla, D., & Farina, D. (2008). Neuromuscular adaptation in experimental and clinical neck pain. *Journal of Electromyography and Kinesiology*, 18(2), 255–261. <https://www.sciencedirect.com/science/article/pii/S1050641106001696>
- Fawkes, C. A., Leach, C. M. J., Mathias, S., & Moore, A. P. (2014). A profile of osteopathic care in private practices in the United Kingdom: A national pilot using standardised data collection. *Manual Therapy*, 19(2), 125–130. <https://www.sciencedirect.com/science/article/pii/S1356689X13001549>
- Ferber, S. G., Granot, M., & Zimmer, E. Z. (2005). Catastrophizing labor pain compromises later maternity adjustments. *American Journal of Obstetrics and Gynecology*, 192(3), 826-831. <https://www.sciencedirect.com/science/article/pii/S0002937804017740>
- Ferrari, R. (2015). Writing narrative style literature reviews. *Medical Writing*, 24(4), 230-235. <https://doi.org/10.1179/2047480615Z.0000000000329>
- Figg-Latham, J., & Rajendran, D. (2017). Quiet dissent: The attitudes, beliefs and behaviours of UK osteopaths who reject low back pain guidance - A qualitative study. *Musculoskeletal Science & Practice*, 27, 97–105. <https://doi.org/10.1016/j.math.2016.10.006>
- Finan, P. H., Goodin, B. R., & Smith, M. T. (2013). The association of sleep and pain: an update and a path forward. *The Journal of Pain*, 14(12), 1539-1552. <https://www.sciencedirect.com/science/article/pii/S1526590013011991>
- Fine, G. A. (1996). Justifying work: Occupational rhetorics as resources in restaurant kitchens. *Administrative Science Quarterly*, 41(1), 90–115. <https://doi.org/10.2307/2393987>
- Flink, I. K., Mroczek, M. Z., Sullivan, M. J., & Linton, S. J. (2009). Pain in childbirth and postpartum recovery—The role of catastrophizing. *European Journal of Pain*, 13(3), 312-316. <https://www.sciencedirect.com/science/article/pii/S1090380108000876>
- Forshaw, M. J. (2007). Free qualitative research from the shackles of method. *The Psychologist*, 20(8), 478–479. <https://psycnet.apa.org/record/2007-12549-002>

Foss, C., & Ellefsen, B. (2002). The value of combining qualitative and quantitative approaches in nursing research by means of method triangulation. *Journal of Advanced Nursing*, 40(2), 242–248. <https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1365-2648.2002.02366.x>

Fox, B., & Worts, D. (1999). Revisiting the critique of medicalized childbirth: A contribution to the sociology of birth. *Gender & Society*, 13(3), 326-346. <https://journals.sagepub.com/doi/abs/10.1177/089124399013003004>

Franke, H., Franke, J. D., & Fryer, G. (2014). Osteopathic manipulative treatment for nonspecific low back pain: a systematic review and meta-analysis. *BMC Musculoskeletal Disorders*, 15, 1-18. <https://link.springer.com/article/10.1186/1471-2474-15-286>

Franke, H., Franke, J. D., Belz, S., & Fryer, G. (2017). Osteopathic manipulative treatment for low back and pelvic girdle pain during and after pregnancy: a systematic review and meta-analysis. *Journal of Bodywork and Movement Therapies*, 21(4), 752-762. <https://www.sciencedirect.com/science/article/pii/S1360859217301146>

Frawley, J. E. (2015). *Women's use of complementary and alternative medicine products and services during pregnancy: insights for safe, informed maternity care* (Doctoral dissertation). <https://www.sciencedirect.com/science/article/pii/S1360859215000583>

Freburger, J. K., Holmes, G. M., Agans, R. P., Jackman, A. M., Darter, J. D., Wallace, A. S., ... & Carey, T. S. (2009). The rising prevalence of chronic low back pain. *Archives of Internal Medicine*, 169(3), 251-258. <https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/414769>

Fredriksen, E. H., Harris, J., & Moland, K. M. (2016). Web-based discussion forums on pregnancy complaints and maternal health literacy in Norway: a qualitative study. *Journal of Medical Internet Research*, 18(5), e113. DOI: [10.2196/jmir.5270](https://doi.org/10.2196/jmir.5270)

Freeman, J. (2005). Towards a definition of holism. *British Journal of General Practice*, 55(511), 154–155. <https://bjgp.org/content/55/511/154.short>

Fry, L. J. (1996). Preliminary findings on the use of osteopathic manipulative treatment by osteopathic physicians. *Journal of Osteopathic Medicine*, 96(2), 91-91. <https://www.degruyter.com/document/doi/10.7556/jaoa.1996.96.2.91/html>

Fryer, G. (2008). Teaching critical thinking in osteopathy – Integrating craft knowledge and evidence-informed approaches. *International Journal of Osteopathic Medicine*, 11(2), 56–61. <https://doi.org/10.1016/j.ijosm.2008.02.005>

Fryer, G. (2016). Somatic dysfunction: an osteopathic conundrum. *International Journal of Osteopathic Medicine*, 22, 52-63. <https://www.sciencedirect.com/science/article/pii/S1746068916300025>

Fryer, G. (2017). Integrating osteopathic approaches based on biopsychosocial therapeutic mechanisms. Part 1: The mechanisms. *International journal of Osteopathic Medicine*, 25, 30-41. <https://www.sciencedirect.com/science/article/pii/S1746068917300317>

Fuchs, T., & Schlimme, J. E. (2009). Embodiment and psychopathology: a phenomenological perspective. *Current Opinion in Psychiatry*, 22(6), 570-575. https://journals.lww.com/co-psychiatry/fulltext/2009/11000/Neurobiology_and_psychotherapy_an_emerging.12.aspx

Fulford, R. (1997). *Dr. Fulford's touch of life: The healing power of the natural life force*. Simon and Schuster.

Gabutti, M., & Draper-Rodi, J. (2014). Osteopathic decapitation: Why do we consider the head differently from the rest of the body? New perspectives for an evidence-informed osteopathic approach to the head. *International Journal of Osteopathic Medicine*, 17(4), 256–262. <https://www.sciencedirect.com/science/article/pii/S1746068914000248>

Gaffney, L., & Smith, C. A. (2004). Use of complementary therapies in pregnancy: the perceptions of obstetricians and midwives in South Australia. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 44(1), 24-29. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/j.1479-828X.2004.00161.x>

Galfano, G., & Longo, M. R. (2015). Implicit and Explicit Body Representations. *European Psychologist*, 20(1), 6–15. <https://doi.org/10.1027/1016-9040/a000198>

Gasparyan, A. Y., Ayvazyan, L., Blackmore, H., & Kitas, G. D. (2011). Writing a narrative biomedical review: considerations for authors, peer reviewers, and editors. *Rheumatology International*, 31, 1409-1417. <https://link.springer.com/article/10.1007/S00296-011-1999-3>

Gaston, L. (1990). The concept of the alliance and its role in psychotherapy: Theoretical and empirical considerations. *Psychotherapy: Theory, Research, Practice, Training*, 27(2), 143. <https://psycnet.apa.org/journals/pst/27/2/143.html?uid=1990-28956-001>

Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychological Bulletin*, 133(4), 581. <https://psycnet.apa.org/record/2007-09203-002>

Gemignani, M. (2017). Toward a Critical Reflexivity in Qualitative Inquiry: Relational and Posthumanist Reflections on Realism, Researcher's Centrality, and Representationalism in Reflexivity. *Qualitative Psychology (Washington, D.C.)*, 4(2), 185–198. <https://psycnet.apa.org/fulltext/2016-51678-001.html>

General Osteopathic Council. (2012). *Osteopathic practice standards*. London: General Osteopathic Council.

Geri, T., Viceconti, A., Minacci, M., Testa, M., & Rossetini, G. (2019). Manual therapy: exploiting the role of human touch. *Musculoskeletal Science and Practice*, 44, 102044. <https://www.sciencedirect.com/science/article/pii/S2468781219302887>

Gibson, B. E., & Martin, D. K. (2003). Qualitative research and evidence-based physiotherapy practice. *Physiotherapy*, 89(6), 350-358. <https://www.sciencedirect.com/science/article/pii/S0031940605600272>

Gifford, L. (1998). Pain, the tissues and the nervous system: a conceptual model. *Physiotherapy*, 84(1), 27-36. <https://www.sciencedirect.com/science/article/pii/S0031940605659007>

Gifford, L. S. (1998). The mature organism model. *Topical Issues in Pain*, 1, 45-56. <https://giffordsachesandpains.com/wp-content/uploads/2013/04/mature-org-ch2-tip1.pdf>

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, 28(3), 585-598. <https://www.cambridge.org/core/journals/psychological-medicine/article/role-of-defeat-and-entrapment-arrested-flight-in-depression-an-exploration-of-an-evolutionary-view/A28C75514B33418F797269B1C276AC87>

Glenberg, A. M. (2010). Embodiment as a unifying perspective for psychology. *Wiley Interdisciplinary Reviews. Cognitive Science*, 1(4), 586–596. <https://doi.org/10.1002/wcs.55>

Godfrey, E., Wileman, V., Galea Holmes, M., McCracken, L. M., Norton, S., Moss-Morris, R., Noonan, S., Barcellona, M., & Critchley, D. (2020). Physical therapy informed by acceptance and commitment therapy (PACT) versus usual care physical therapy for adults with chronic low back pain: A randomized controlled trial. *The Journal of Pain*, 21(1–2), 71–81. <https://doi.org/10.1016/j.jpain.2019.05.012>

Golsworthy, R., & Coyle, A. (2001). Practitioners' accounts of religious and spiritual dimensions in bereavement therapy. *Counselling Psychology Quarterly*, 14(3), 183-202.
<https://www.tandfonline.com/doi/abs/10.1080/09515070110037993>

Grace, S., Fleischmann, M., & Vaughan, B. (2021). "If you don't use or understand visceral osteopathy you're not a real osteopath": Professional identity in Australian osteopathy through the lens of a single traditional technique. *Explore*, 17(6), 535-540.
<https://www.sciencedirect.com/science/article/pii/S1550830720302196>

Grace, S., Orrock, P., Vaughan, B., Blaich, R., & Coutts, R. (2016). Understanding clinical reasoning in osteopathy: a qualitative research approach. *Chiropractic & Manual Therapies*, 24, 1-10.
<https://link.springer.com/article/10.1186/s12998-016-0087-x>

Grace, V. (2003). Embodiment and meaning: Understanding chronic pelvic pain. *Journal of Consciousness Studies*, 10(11), 41-60.
<https://www.ingentaconnect.com/content/imp/jcs/2003/00000010/00000011/art00003>

Granath, A. B., Hellgren, M. S., & Gunnarsson, R. K. (2006). Water aerobics reduces sick leave due to low back pain during pregnancy. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 35(4), 465-471.
<https://www.sciencedirect.com/science/article/pii/S0884217515343914>

Grandi, L. C. (2016). From sweeping to the caress: Similarities and discrepancies between human and non-human primates' pleasant touch. *Frontiers in Psychology*, 7, 1371.
<https://www.frontiersin.org/articles/10.3389/fpsyg.2016.01371/full>

Grant, L. D., Long, B. C., & Willms, J. D. (2002). Women's adaptation to chronic back pain: Daily appraisals and coping strategies, personal characteristics and perceived spousal responses. *Journal of Health Psychology*, 7(5), 545-563.
<https://journals.sagepub.com/doi/abs/10.1177/1359105302007005675>

Greening, J., Lynn, B., & Leary, R. (2003). Sensory and autonomic function in the hands of patients with non-specific arm pain (NSAP) and asymptomatic office workers. *Pain*, 104(1), 275-281.
https://journals.lww.com/pain/fulltext/2003/07000/Sensory_and_autonomic_function_in_the_hands_of.30.aspx

Guillaud, A., Darbois, N., Monvoisin, R., & Pinsault, N. (2016). Reliability of diagnosis and clinical efficacy of cranial osteopathy: a systematic review. *PLoS One*, 11(12), e0167823.
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167823>

Gundermann, S. (2013). Effectiveness of osteopathic treatment in pregnant women suffering from low back pain. A randomized controlled trial. *Unpublished DO Thesis. Akademie für Osteopathie.*

Gureje, O., Von Korff, M., Simon, G. E., & Gater, R. (1998). Persistent pain and well-being: a World Health Organization study in primary care. *Jama*, 280(2), 147-151. <https://jamanetwork.com/journals/jama/article-abstract/187723>

Gustafsson, M., & Gaston-Johansson, F. (1996). Pain intensity and health locus of control: a comparison of patients with fibromyalgia syndrome and rheumatoid arthritis. *Patient Education and Counseling*, 29(2), 179-188. <https://www.sciencedirect.com/science/article/pii/0738399196008646>

Guthrie, R. A., & Martin, R. H. (1982). Effect of pressure applied to the upper thoracic (placebo) versus lumbar areas (osteopathic manipulative treatment) for inhibition of lumbar myalgia during labor. *The Journal of the American Osteopathic Association*, 82(12), 57-64. <https://www.degruyter.com/document/doi/10.1515/jom-1982-821219/html>

Gutke, A., Betten, C., Degerskär, K., Pousette, S., & Fagevik Olsén, M. (2015). Treatments for pregnancy-related lumbopelvic pain: a systematic review of physiotherapy modalities. *Acta Obstetrica et Gynecologica Scandinavica*, 94(11), 1156-1167.

Gutke, A., Josefsson, A., & Öberg, B. (2007). Pelvic girdle pain and lumbar pain in relation to postpartum depressive symptoms. *Spine*, 32(13), 1430-1436. https://journals.lww.com/spinejournal/fulltext/2007/06010/pelvic_girdle_pain_and_lumbar_pain_in_relation_to.12.aspx

Gutke, A., Olsson, C. B., Vollestad, N., Öberg, B., Nilsson Wikmar, L., & Stendal Robinson, H. (2014). Association between lumbopelvic pain, disability and sick leave during pregnancy-a comparison of three Scandinavian cohorts. *Journal of Rehabilitation Medicine*, 46(5), 468-474. DOI: [10.2340/16501977-1801](https://doi.org/10.2340/16501977-1801)

Guys and St Thomas' Hospital. (2024, March). *Low back pain: physiotherapy and exercises*. NHS. <https://www.guysandstthomas.nhs.uk/health-information/low-back-pain/physiotherapy-and-exercises>

Haakstad, L. A., & Bø, K. (2015). Effect of a regular exercise programme on pelvic girdle and low back pain in previously inactive pregnant women: a randomized controlled trial. *Journal of Rehabilitation Medicine*, 47(3), 229-234. <https://core.ac.uk/reader/30870630>

Häfner, M. (2013). When body and mind are talking: Interoception moderates embodied cognition. *Experimental Psychology*, 60(4), 255–259. <https://doi.org/10.1027/1618-3169/a000194>

Hagen, K. B., Jamtvedt, G., Hilde, G., & Winnem, M. F. (2005). The updated cochrane review of bed rest for low back pain and sciatica. *Spine*, 30(5), 542-546. https://journals.lww.com/spinejournal/FullText/2005/03010/The_Updated_Cochrane_Review_of_Bed_Rest_for_Low.11.aspx

Hall, H., Cramer, H., Sundberg, T., Ward, L., Adams, J., Moore, C., ... & Lauche, R. (2016). The effectiveness of complementary manual therapies for pregnancy-related back and pelvic pain: A systematic review with meta-analysis. *Medicine*, 95(38), e4723. https://journals.lww.com/md-journal/fulltext/2016/09200/the_effectiveness_of_complementary_manual.10.aspx

Hanchard, N. C. A., Goodchild, L., Brealey, S. D., Lamb, S. E., & Rangan, A. (2020). Physiotherapy for primary frozen shoulder in secondary care: Developing and implementing stand-alone and post operative protocols for UK FROST and inferences for wider practice. *Physiotherapy*, 107, 150-160. <https://www.sciencedirect.com/science/article/pii/S003194061930080X>

Hanchard, N. C., Goodchild, L., Thompson, J., O'brien, T., Davison, D., & Richardson, C. (2012). Evidence-based clinical guidelines for the diagnosis, assessment and physiotherapy management of contracted (frozen) shoulder: quick reference summary. *Physiotherapy*, 98(2), 117-120. [https://www.physiotherapyjournal.com/article/S0031-9406\(12\)00002-8/abstract](https://www.physiotherapyjournal.com/article/S0031-9406(12)00002-8/abstract)

Hansen, A., Jensen, D. V., Wormslev, M., Minck, H., Johansen, S., Larsen, E. C., Wilken-Jensen, C., Davidsen, M., & Hansen, T. M. (1999). Symptom-giving pelvic girdle relaxation in pregnancy, II: Symptoms and clinical signs. *Acta Obstetrica et Gynecologica Scandinavica*, 78(2), 111–115. <https://doi.org/10.1034/j.1600-0412.1999.780207.x>

Haq, Z. U., Rasheed, R., Rashid, A., & Akhter, S. (2023). Criteria for assessing and ensuring the trustworthiness in qualitative research. *International Journal of Business Reflections*, 4(2). <https://doi.org/10.56249/ijbr.03.01.44>

Härkäpää, K., Järvikoski, A., Mellin, G., Hurri, H., & Luoma, J. (1991). Health locus of control beliefs and psychological distress as predictors for treatment outcome in low-back pain patients: results of a 3-month follow-up of a controlled intervention study. *Pain*, 46(1), 35-41. https://journals.lww.com/pain/abstract/1991/07000/health_locus_of_control_beliefs_and_psychological.8.aspx

- Harman, G., & Clare, L. (2006). Illness representations and lived experience in early-stage dementia. *Qualitative Health Research*, 16(4), 484-502. <https://journals.sagepub.com/doi/abs/10.1177/1049732306286851>
- Harris, S. J., Papathanassoglou, E. D. E., Gee, M., Hampshaw, S. M., Lindgren, L., & Haywood, A. (2019). Interpersonal touch interventions for patients in intensive care: A design-oriented realist review. *Nursing Open*, 6(2), 216–235. <https://doi.org/10.1002/nop2.200>
- Hart, L. (1918). Obstetrical practice. *Journal of the American Osteopathic Association*, 609 – 614.
- Harvey, E., Burton, A. K., Moffett, J. K., Breen, A., & UK BEAM trial team. (2003). Spinal manipulation for low-back pain: a treatment package agreed by the UK chiropractic, osteopathy and physiotherapy professional associations. *Manual therapy*, 8(1), 46-51. <https://www.sciencedirect.com/science/article/pii/S1356689X02904728>
- Harvey, J. H. (2014). *Perspectives on loss: A sourcebook*. Routledge.
- Harvie, D. S., Meulders, A., Reid, E., Camfferman, D., Brinkworth, R. S., & Moseley, G. L. (2016). Selectivity of conditioned fear of touch is modulated by somatosensory precision. *Psychophysiology*, 53(6), 921-929. <https://onlinelibrary.wiley.com/doi/abs/10.1111/psyp.12631>
- Hatcher, R. L., & Barends, A. W. (2006). How a return to theory could help alliance research. *Psychotherapy: Theory, Research, Practice, Training*, 43(3), 292. <https://psycnet.apa.org/buy/2006-12148-007>
- Hayden, J. A., Dunn, K. M., Van der Windt, D. A., & Shaw, W. S. (2010). What is the prognosis of back pain?. *Best Practice & Research Clinical Rheumatology*, 24(2), 167-179. <https://www.sciencedirect.com/science/article/pii/S1521694209001508>
- Hayden, J. A., Van Tulder, M. W., & Tomlinson, G. (2005). Systematic review: strategies for using exercise therapy to improve outcomes in chronic low back pain. *Annals of Internal Medicine*, 142(9), 776-785. <https://www.acpjournals.org/doi/abs/10.7326/0003-4819-142-9-200505030-00014>
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, 44(1), 1-25. <https://www.sciencedirect.com/science/article/pii/S0005796705002147>

Hazelbaker, A. K. (2020). The Impact of Craniosacral Therapy/Cranial Osteopathy on Breastfeeding. *Clinical Lactation*, 11(1).

<https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=21580782&AN=141697537&h=v2RE%2Bilmse8uUbulTW5Zzg%2BjqRvOnDFRqp0gZtlzJJgTLeLwY%2Bu4lhQtx793yhC4ey3geX2QbHyekitgSrsIUg%3D%3D&crI=c>

Healthwatch. (2023, October 7). *How to get the most out of your GP appointment*. <https://www.healthwatch.co.uk/advice-and-information/2023-10-07/how-get-most-out-your-gp-appointment>

Healy, C. J., Brockway, M. D., & Wilde, B. B. (2021). Osteopathic manipulative treatment (OMT) use among osteopathic physicians in the United States. *Journal of Osteopathic Medicine*, 121(1), 57-61. <https://www.degruyter.com/document/doi/10.1515/jom-2020-0013/html>

Hellström, C. (2001). Affecting the Future: Chronic Pain and Perceived Agency in a Clinical Setting. *Time & Society*, 10(1), 77-92. <https://journals.sagepub.com/doi/abs/10.1177/0961463x01010001005>

Hellström, C. (2001). Affecting the future: chronic pain and perceived agency in a clinical setting. *Time & Society*, 10(1), 77-92. <https://doi.org/10.1177/0961463X01010001005>

Hellström, C. (2001). Temporal dimensions of the self-concept: Entrapped and possible selves in chronic pain. *Psychology and Health*, 16(1), 111-124. <https://www.tandfonline.com/doi/abs/10.1080/08870440108405493>

Hensing, G., & Alexanderson, K. (2004). The association between sex segregation, working conditions, and sickness absence among employed women. *Occupational and Environmental Medicine (London, England)*, 61(2), e7–e7. <https://doi.org/10.1136/oem.2002.005504>

Hertenstein, M. J., Holmes, R., McCullough, M., & Keltner, D. (2009). The communication of emotion via touch. *Emotion*, 9(4), 566. <https://psycnet.apa.org/fulltext/2009-11528-017.html>

Hestbaek, L., Leboeuf-Yde, C., & Manniche, C. (2003). Low back pain: what is the long-term course? A review of studies of general patient populations. *European Spine Journal*, 12, 149-165. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3784852/pdf/586_2003_Article_508.pdf

Hidalgo, D. F., MacMillan, A., & Thomson, O. P. (2024). ‘It's all connected, so it all matters’-the fallacy of osteopathic anatomical possibilism. *International Journal of Osteopathic Medicine*, 52, 100718. <https://www.sciencedirect.com/science/article/pii/S1746068924000117>

- Hinostroza-Paredes, Y. (2023). Reflexivity and agency in university-based teacher educators: a critical realist analysis. *Teaching in Higher Education, ahead-of-print*(ahead-of-print), 1–19. <https://www.tandfonline.com/doi/abs/10.1080/13562517.2021.1943651>
- Hoffman, B. M., Papas, R. K., Chatkoff, D. K., & Kerns, R. D. (2007). Meta-analysis of psychological interventions for chronic low back pain. *Health psychology, 26*(1), 1. <https://psycnet.apa.org/journals/hea/26/1/1/>
- Hohenschurz-Schmidt, D., Thomson, O. P., Rossettini, G., Miciak, M., Newell, D., Roberts, L., ... & Draper-Rodi, J. (2022). Avoiding nocebo and other undesirable effects in chiropractic, osteopathy and physiotherapy: An invitation to reflect. *Musculoskeletal Science and Practice, 62*, 102677. <https://www.sciencedirect.com/science/article/pii/S2468781222001771>
- Holloway, I., & Todres, L. (2003). The Status of Method: Flexibility, Consistency and Coherence. *Qualitative Research: QR, 3*(3), 345–357. <https://doi.org/10.1177/1468794103033004>
- Holmes, S., Coyle, A., & Thomson, E. (1997). Quality of life in survivors of bone marrow transplant. *Journal of Cancer Nursing, 1*(3), 106–116. <https://www.sciencedirect.com/science/article/pii/S1364982597800168>
- Hong, J., Reed, C., Novick, D., & Happich, M. (2013). Costs associated with treatment of chronic low back pain: an analysis of the UK General Practice Research Database. *Spine, 38*(1), 75-82. <https://doi.org/10.1097/BRS.0b013e318276450f>
- Hoogendoorn, W. E., Bongers, P. M., De Vet, H. C. W., Ariens, G. A. M., Van Mechelen, W., & Bouter, L. M. (2002). High physical work load and low job satisfaction increase the risk of sickness absence due to low back pain: results of a prospective cohort study. *Occupational and Environmental Medicine, 59*(5), 323-328. <https://oem.bmj.com/content/59/5/323.short>
- Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counselling Psychology, 38*(2), 139–149. <https://doi.org/10.1037/0022-0167.38.2.139>
- Horwitz, S. M., Briggs-Gowan, M. J., Storfer-Isser, A., & Carter, A. S. (2009). Persistence of maternal depressive symptoms throughout the early years of childhood. *Journal of Women's Health, 18*(5), 637-645. <https://www.liebertpub.com/doi/abs/10.1089/jwh.2008.1229>

- Hoving, J. L., De Vet, H. C., Koes, B. W., Van Mameren, H., Devillé, W. L., Van Der Windt, D. A., ... & Bouter, L. M. (2006). Manual therapy, physical therapy, or continued care by the general practitioner for patients with neck pain: long-term results from a pragmatic randomized clinical trial. *The Clinical Journal of Pain*, 22(4), 370-377. https://journals.lww.com/clinicalpain/fulltext/2006/05000/Active_Treatment_of_Chronic_Neck_Pain_A.00008.aspx
- Howe, K. R. (1988). Against the Quantitative-Qualitative Incompatibility Thesis or Dogmas Die Hard. *Educational Researcher*, 17(8), 10-16. <https://doi.org/10.3102/0013189X017008010>
- Hoy, D., Brooks, P., Blyth, F., & Buchbinder, R. (2010). The epidemiology of low back pain. *Best practice & Research Clinical Rheumatology*, 24(6), 769-781. https://www.academia.edu/download/52479451/The_Epidemiology_of_low_back_pain20170404-6007-1elz5s9.pdf
- Hoy, D., March, L., Brooks, P., Blyth, F., Woolf, A., Bain, C., ... & Buchbinder, R. (2014). The global burden of low back pain: estimates from the Global Burden of Disease 2010 study. *Annals of the Rheumatic Diseases*, 73(6), 968-974. <https://repository.fnu.ac.fj/id/eprint/135/1/The%20global%20burden%20of%20low%20back%20pain%20estimates%20from.pdf>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288. <https://journals.sagepub.com/doi/abs/10.1177/1049732305276687>
- Hughes, L. S., Clark, J., Colclough, J. A., Dale, E., & McMillan, D. (2017). Acceptance and commitment therapy (ACT) for chronic pain: a systematic review and meta-analyses. *The Clinical Journal of Pain*, 33(6), 552-568. <https://doi.org/10.1097/AJP.0000000000000425>
- Hutchby, I., & Wooffitt, R. (1998). *Conversation Analysis*. Polity Press.
- IJzelenberg, W., & Burdorf, A. (2004). Patterns of care for low back pain in a working population. *Spine*, 29(12), 1362-1368. https://pure.eur.nl/files/46315798/061025_IJzelenberg,%20Wilhelmina.pdf#page=21
- Jellema, P., van der Windt, D. A., van der Horst, H. E., Stalman, W. A., & Bouter, L. M. (2007). Prediction of an unfavourable course of low back pain in general practice: comparison of four instruments. *British Journal of General Practice*, 57(534), 15-22. <https://bjgp.org/content/57/534/15.short>

Johanson, R., Newburn, M., & Macfarlane, A. (2002). Has the medicalisation of childbirth gone too far? *British Medical Journal*, 324(7342), 892–895. <https://doi.org/10.1136/bmj.324.7342.892>

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), 14–26. <https://journals.sagepub.com/doi/abs/10.3102/0013189X033007014>

Johnston, R. G., & Brown, A. E. (2013). Maternal trait personality and childbirth: The role of extraversion and neuroticism. *Midwifery*, 29(11), 1244-1250. <https://www.sciencedirect.com/science/article/pii/S026661381200157X>

Jones, M. A. (1992). Clinical reasoning in manual therapy. *Physical Therapy*, 72(12), 875-884. <https://academic.oup.com/ptj/article-abstract/72/12/875/2728881>

Jongen, P. J., Ruimschotel, R. P., Museler-Kreijns, Y. M., Dragstra, T. M. C., Duyverman, L., Valkenburg-Vissers, J., ... & Hartog, A. (2017). Improved health-related quality of life, participation, and autonomy in patients with treatment-resistant chronic pain after an intensive social cognitive intervention with the participation of support partners. *Journal of Pain Research*, 2725-2738. <https://www.tandfonline.com/doi/pdf/10.2147/JPR.S137609>

Jull, G., & Moore, A. (2012). Hands on, hands off? The swings in musculoskeletal physiotherapy practice. *Manual Therapy*, 3(17), 199-200. <http://www.infona.pl/resource/bwmeta1.element.elsevier-fd2ca1b8-1b98-363a-bbb1-7d2d860d5a3b>

Kabeer, N. (2001). *Discussing women's empowerment: Theory and practice*. Novum Grafiska AB.

Kakaşçı, Ç. G., Potur, D. C., Abbasoğlu, D. E., Karabulut, Ö., Merih, Y. D., & Demirci, N. (2022). Is participation in antenatal classes associated with fathers' mental health? A quasi-experimental and prospective study. *Infant Mental Health Journal*, 43(6), 938–950. <https://onlinelibrary.wiley.com/doi/abs/10.1002/imhj.22015>

Kalmbach, D. A., Buysse, D. J., Cheng, P., Roth, T., Yang, A., & Drake, C. L. (2020). Nocturnal cognitive arousal is associated with objective sleep disturbance and indicators of physiologic hyperarousal in good sleepers and individuals with insomnia disorder. *Sleep Medicine*, 71, 151-160. <https://www.sciencedirect.com/science/article/pii/S1389945719315497>

- Kamysheva, E., Skouteris, H., Wertheim, E. H., Paxton, S. J., & Milgrom, J. (2008). Examination of a multi-factorial model of body-related experiences during pregnancy: The relationships among physical symptoms, sleep quality, depression, self-esteem, and negative body attitudes. *Body Image*, 5(2), 152-163. <https://www.sciencedirect.com/science/article/pii/S1740144508000065>
- Kandel, B. (2020). Qualitative versus quantitative research. *Marsyangdi Journal*, 1(1), 1-5. <https://mmc.edu.np/Images/Download/13265c7d-ae2d-4c37-8d2c-403261bd0736.pdf#page=7>
- Karacam, Z., & Ancel, G. (2009). Depression, anxiety and influencing factors in pregnancy: a study in a Turkish population. *Midwifery*, 25(4), 344–356. <https://doi.org/10.1016/j.midw.2007.03.006>
- Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, 30(7), 865-878. <https://www.sciencedirect.com/science/article/pii/S0272735810000413>
- Kashyap, A., & Sharma, K. N. (2023). The impact of nocebic language in patient communication. *The International Journal of Creative Research Thoughts*, 11(5). https://www.researchgate.net/profile/Ankita-Kashyap-2/publication/370769530_The_Impact_of_Nocebic_Language_in_Patient_Communication/links/6462242ff43b8a29ba5254aa/The-Impact-of-Nocebic-Language-in-Patient-Communication.pdf
- Kasiri-Martino, H., & Bright, P. (2016). Osteopathic educators' attitudes towards osteopathic principles and their application in clinical practice: A qualitative inquiry. *Manual Therapy*, 21, 233–240. <https://www.sciencedirect.com/science/article/pii/S1356689X15001770>
- Katonis, P., Kampouroglou, A., Aggelopoulos, A., Kakavelakis, K., Lykoudis, S., Makrigiannakis, A., & Alpantaki, K. (2011). Pregnancy-related low back pain. *Hippokratia*, 15(3), 205. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3306025/>
- Keen, S., Lomeli-Rodriguez, M., & Joffe, H. (2022). From Challenge to Opportunity: Virtual Qualitative Research During COVID-19 and Beyond. *International Journal of Qualitative Methods*, 21. <https://doi.org/10.1177/16094069221105075>
- Kelly, G. A., Blake, C., Power, C. K., O'keeffe, D., & Fullen, B. M. (2011). The association between chronic low back pain and sleep: a systematic review. *The Clinical Journal of Pain*, 27(2), 169-181. https://journals.lww.com/clinicalpain/fulltext/2011/02000/the_association_between_chronic_low_b_ack_pain_and.12.aspx

- Kennedy, H. P., Cheyney, M., Lawlor, M., Myers, S., Schuiling, K., & Tanner, T. (2015). The development of a consensus statement on normal physiologic birth: a modified Delphi study. *Journal of Midwifery & Women's Health*, 60(2), 140–145. <https://doi.org/10.1111/jmwh.12254>
- Kent, P. M., Keating, J. L., & Buchbinder, R. (2009). Searching for a conceptual framework for nonspecific low back pain. *Manual Therapy*, 14(4), 387-396. <https://www.sciencedirect.com/science/article/pii/S1356689X08001112>
- Keskin, E. A., Onur, O., Keskin, H. L., Gumus, I. I., Kafali, H., & Turhan, N. (2012). Transcutaneous electrical nerve stimulation improves low back pain during pregnancy. *Gynecologic and Obstetric Investigation*, 74(1), 76-83. <https://karger.com/Article/PDF/337720>
- Keyes, C. L. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*, 73(3), 539. <https://psycnet.apa.org/fulltext/2005-06517-016.html>
- Khan, M. N. U., Morrison, N. M., & Marshall, P. W. (2020). The role of fear-avoidance Beliefs on low back pain-related disability in a developing socioeconomic and conservative culture: a cross-sectional study of a Pakistani population. *Journal of Pain Research*, 2377-2387. <https://www.tandfonline.com/doi/pdf/10.2147/jpr.s258314>
- Kibsgård, T. J. (2015). Radiostereometric analysis of sacroiliac joint movement and outcomes of pelvic joint fusion. *Acta Orthopaedica*, 86(sup359), S1-S40. <https://www.tandfonline.com/doi/full/10.3109/17453674.2015.1022707>
- Kidder, L. H., & Fine, M. (1987). Qualitative and quantitative methods: When stories converge. *New Directions for Program Evaluation*, 1987(35), 57-75. <https://onlinelibrary.wiley.com/doi/abs/10.1002/ev.1459>
- Kiefer, M., & Trumpp, N. M. (2012). Embodiment theory and education: The foundations of cognition in perception and action. *Trends in Neuroscience and Education*, 1(1), 15–20. <https://doi.org/10.1016/j.tine.2012.07.002>
- Kiefer, M., Trumpp, N., Herrnberger, B., Sim, E. J., Hoenig, K., & Pulvermüller, F. (2012). Dissociating the representation of action-and sound-related concepts in middle temporal cortex. *Brain and Language*, 122(2), 120-125. <https://www.sciencedirect.com/science/article/pii/S0093934X12000971>
- King, H. H. (1997). *The collected papers of Irvin M. Korr*. American Academy of Osteopathy.

- King, H. H., Tettambel, M. A., Lockwood, M. D., Johnson, K. H., Arsenault, D. A., & Quist, R. (2003). Osteopathic manipulative treatment in prenatal care: a retrospective case control design study. *Journal of Osteopathic Medicine*, 103(12), 577-582. <https://www.degruyter.com/document/doi/10.7556/jaoa.2003.103.12.577/pdf>
- Kitzinger, J. (1995). Qualitative research: introducing focus groups. *British Medical Journal*, 311(7000), 299-302. <https://www.bmj.com/content/311/7000/299.short>
- Kitzinger, S. (2012). Rediscovering the social model of childbirth. *Birth*, 39(4), 301-304. <https://onlinelibrary.wiley.com/doi/abs/10.1111/birt.12005>
- Kleiner, M. J., Kinsella, E. A., Miciak, M., Teachman, G., McCabe, E., & Walton, D. M. (2023). An integrative review of the qualities of a 'good' physiotherapist. *Physiotherapy Theory and Practice*, 39(1), 89-116. <https://www.tandfonline.com/doi/abs/10.1080/09593985.2021.1999354>
- Kluge, J., Hall, D., Louw, Q., Theron, G., & Grové, D. (2011). Specific exercises to treat pregnancy-related low back pain in a South African population. *International Journal of Gynecology and Obstetrics*, 113(3), 187–191. <https://doi.org/10.1016/j.ijgo.2010.10.030>
- Knudsen, S. D. P., Roland, C. B., Alomairah, S. A., Jessen, A. D., Maindal, H. T., Bendix, J. M., ... & Molsted, S. (2024). The effect of exercise training and motivational counselling on physical activity behaviour and psychosocial factors in pregnant women: secondary analyses of the FitMum randomised controlled trial investigating prenatal physical activity. *BMC Public Health*, 24(1), 92. <https://link.springer.com/article/10.1186/s12889-023-17525-3>
- Koes, B. W., Van Tulder, M. W., Ostelo, R., Burton, A. K., & Waddell, G. (2001). Clinical guidelines for the management of low back pain in primary care: an international comparison. *Spine*, 26(22), 2504-2513. https://www.academia.edu/download/53177075/Clinical_Guidelines_for_the_Management_o20170518-3477-gt4u5w.pdf
- Koes, B. W., Van Tulder, M., Lin, C. W. C., Macedo, L. G., McAuley, J., & Maher, C. (2010). An updated overview of clinical guidelines for the management of non-specific low back pain in primary care. *European Spine Journal*, 19, 2075-2094. <https://link.springer.com/article/10.1007/s00586-010-1502-y>
- Korthals-de Bos, I. B., Müllner, M., Hoving, J. L., van Tulder, M. W., Rutten-van Mölken, M. P., Adèr, H. J., ... & Bouter, L. M. (2003). Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain: economic evaluation alongside a randomised controlled trial

Commentary: Bootstrapping simplifies appreciation of statistical inferences. *British Medical Journal*, 326(7395), 911-914. <https://www.bmj.com/content/326/7395/911.short>

Korthals-de Bos, I., Hoving, J., van Tulder, M., Rutten-van Mölken, P., Adler, H., de Vet, H., ... & Bouter, L. (2005). Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain: Economic evaluation alongside a randomized controlled trial. *Manuelle Medizin*, 43, 311-318. <https://link.springer.com/article/10.1007/s00337-005-0383-3>

Kovacs, F. M., Abraira, V., Zamora, J., Fernández, C., & Spanish Back Pain Research Network. (2005). The transition from acute to subacute and chronic low back pain: a study based on determinants of quality of life and prediction of chronic disability. *Spine*, 30(15), 1786-1792. https://journals.lww.com/spinejournal/fulltext/2005/08010/the_transition_from_acute_to_subacute_and_chronic.17.aspx

Kovacs, F. M., Garcia, E., Royuela, A., González, L., Abraira, V., & Spanish Back Pain Research Network. (2012). Prevalence and factors associated with low back pain and pelvic girdle pain during pregnancy: a multicenter study conducted in the Spanish National Health Service. *Spine*, 37(17), 1516-1533. https://journals.lww.com/spinejournal/fulltext/2012/08010/Prevalence_and_Factors_Associated_With_Low_Back.14.aspx

Krueger, R. A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research*. Sage Publications.

Kuslich, S. D., Ulstrom, C. L., & Michael, C. J. (1991). The tissue origin of low back pain and sciatica: a report of pain response to tissue stimulation during operations on the lumbar spine using local anesthesia. *The Orthopedic clinics of North America*, 22(2), 181-187. <https://europepmc.org/article/med/1826546>

Kvorning, N., Holmberg, C., Grennert, L., Åberg, A., & Åkeson, J. (2004). Acupuncture relieves pelvic and low-back pain in late pregnancy. *Acta Obstetrica et Gynecologica Scandinavica*, 83(3), 246-250. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/j.0001-6349.2004.0215.x>

Kwon, B. K., Roffey, D. M., Bishop, P. B., Dagenais, S., & Wai, E. K. (2011). Systematic review: occupational physical activity and low back pain. *Occupational Medicine (Oxford)*, 61(8), 541-548. <https://doi.org/10.1093/occmed/kqr092>

Lampe, A., Sölder, E., Ennemoser, A., Schubert, C., Rumpold, G., & Söllner, W. (2000). Chronic pelvic pain and previous sexual abuse. *Obstetrics & Gynecology*, 96(6), 929-933.

https://journals.lww.com/greenjournal/fulltext/2000/12000/Chronic_Pelvic_Pain_and_Previous_Sexual_Abuse.12.aspx

Langer, A., Campero, L., Garcia, C., & Reynoso, S. (1998). Effects of psychosocial support during labour and childbirth on breastfeeding, medical interventions, and mothers' wellbeing in a Mexican public hospital: a randomised clinical trial. *BJOG: An International Journal of Obstetrics & Gynaecology*, 105(10), 1056-1063. <https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/j.1471-0528.1998.tb09936.x>

Larkin, M., & Thompson, A. (2012). Interpretative phenomenological analysis. In A. Thompson & D. Harper (Eds.), *Qualitative research methods in mental health and psychotherapy: a guide for students and practitioners* (pp. 99-116). John Wiley & Sons.

Larkin, M., Watts, S., & Clifton, E. (2006). Giving voice and making sense in interpretative phenomenological analysis. *Qualitative Research in Psychology*, 3(2), 102–120. <https://doi.org/10.1191/1478088706qp062oa>

Lawton, M., Haddock, G., Conroy, P., & Sage, K. (2016). Therapeutic alliances in stroke rehabilitation: A meta-ethnography. *Archives of Physical Medicine and Rehabilitation*, 97(11), 1979-1993. <https://www.sciencedirect.com/science/article/pii/S0003999316300831>

Lederman, E. (2011). The fall of the postural-structural-biomechanical model in manual and physical therapies: exemplified by lower back pain. *Journal of Bodywork and Movement Therapies*, 15(2), 131-138. https://www.researchgate.net/profile/John-Ware-4/post/What_helps_lumbar_disc_bulges_heal_faster/attachment/59d61dac79197b80779793ae/AS%3A272168837943310%401441901515711/download/Lederman.2010.The_fall_of_the_postural-structural-biomechanical_model.pdf

Lee, E. (2006). Medicalizing motherhood. *Society*, 43(6), 47-50. https://www.academia.edu/download/51088199/Medicalizing_Motherhood20161228-13811-sccae5.pdf

Leonhardt, C., Lehr, D., Chenot, J. F., Keller, S., Luckmann, J., Basler, H. D., ... & Becker, A. (2009). Are fear-avoidance beliefs in low back pain patients a risk factor for low physical activity or vice versa? A cross-lagged panel analysis. *GMS Psycho-Social-Medicine*, 6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2736477/>

- Lethem, J., Slade, P. D., Troup, J. D. G., & Bentley, G. (1983). Outline of a fear-avoidance model of exaggerated pain perception—I. *Behaviour Research and Therapy*, 21(4), 401-408. https://www.researchgate.net/profile/Peter-Slade-3/publication/16570432_OUTLINE_OF_A_FEAR-AVOIDANCE_MODEL_OF_EXAGGERATED_PAIN_PERCEPTION_1/links/5a9d35dc0f7e9be37968aa28/OUTLINE-OF-A-FEAR-AVOIDANCE-MODEL-OF-EXAGGERATED-PAIN-PERCEPTION-1.pdf
- Leung, L. (2012). Pain catastrophizing: an updated review. *Indian Journal of Psychological Medicine*, 34(3), 204-217. <https://journals.sagepub.com/doi/pdf/10.4103/0253-7176.106012>
- Lewis-Smith, H., Diedrichs, P. C., & Halliwell, E. (2019). Cognitive-behavioral roots of body image therapy and prevention. *Body Image*, 31, 309-320. <https://www.sciencedirect.com/science/article/pii/S1740144519303602>
- Liamputtong, P. (2011). *Focus group methodology: Principles and practice*. Sage Publications.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., ... & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *British Medical Journal*, 339. <https://doi.org/10.1136/bmj.b2700>
- Licciardone, J. C., Brimhall, A. K., & King, L. N. (2005). Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. *BMC Musculoskeletal Disorders*, 6, 1-12. <https://link.springer.com/article/10.1186/1471-2474-6-43>
- Licciardone, J. C., Buchanan, S., Hensel, K. L., King, H. H., Fulda, K. G., & Stoll, S. T. (2010). Osteopathic manipulative treatment of back pain and related symptoms during pregnancy: a randomized controlled trial. *American Journal of Obstetrics and Gynecology*, 202(1), 43-e1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2811218/>
- Licciardone, J. C., Minotti, D. E., Gatchel, R. J., Kearns, C. M., & Singh, K. P. (2013). Osteopathic manual treatment and ultrasound therapy for chronic low back pain: a randomized controlled trial. *The Annals of Family Medicine*, 11(2), 122-129. <https://www.annfammed.org/content/11/2/122.short>
- Licciardone, J. C., Stoll, S. T., Fulda, K. G., Russo, D. P., Siu, J., Winn, W., & Swift Jr, J. (2003). Osteopathic manipulative treatment for chronic low back pain: a randomized controlled trial. *Spine*, 28(13), 1355-1362. https://journals.lww.com/spinejournal/abstract/2003/07010/osteopathic_manipulative_treatment_for_chronic_low.2.aspx

Licciardone, J., Gamber, R., & Cardarelli, K. (2002). Patient satisfaction and clinical outcomes associated with osteopathic manipulative treatment. *Journal of Osteopathic Medicine*, 102(1), 13-20. <https://www.degruyter.com/document/doi/10.7556/jaoa.2002.102.1.13/html>

Lincoln, Y. S., Guba, E. G., & Pilotta, J. J. (1985). Naturalistic inquiry. *International Journal of Intercultural Relations*, 9(4), 438–439. [https://doi.org/10.1016/0147-1767\(85\)90062-8](https://doi.org/10.1016/0147-1767(85)90062-8)

Linton, S. J. (2000). A review of psychological risk factors in back and neck pain. *Spine*, 25(9), 1148-1156. https://journals.lww.com/spinejournal/fulltext/2000/05010/Can_We_Screen_for_Problematic_Back_Pain_A.00017.aspx

Linton, S. J., & Halldén, K. (1998). Can we screen for problematic back pain? A screening questionnaire for predicting outcome in acute and subacute back pain. *The Clinical Journal of Pain*, 14(3), 209-215. https://journals.lww.com/clinicalpain/fulltext/1998/09000/can_we_screen_for_problematic_back_pain_a.7.aspx

Liu, P., Yao, J., & Qiu, C. (2021). Nursing intervention using healing touch in total knee replacement: A randomized controlled study protocol. *Medicine (Baltimore)*, 100(3), e23735–e23735. <https://doi.org/10.1097/MD.00000000000023735>

Lloyd, L. F., & Dunn, L. R. (2007). Mind-body-spirit medicine: Interventions and resources. *JAAPA*, 20(10), 31-35. https://journals.lww.com/jaapa/fulltext/2007/10000/Mind_body_spirit_medicine_Interventions_and.19.aspx

Long, G., Yao, Z. Y., Na, Y., Ping, Y., Wei, S., & Mingsheng, T. (2020). Different types of low back pain in relation to pre- and post-natal maternal depressive symptoms. *BMC Pregnancy and Childbirth*, 20(1), 551–551. <https://doi.org/10.1186/s12884-020-03139-9>

Longo, M. R., Cardozo, S., & Haggard, P. (2008). Visual enhancement of touch and the bodily self. *Consciousness and Cognition*, 17(4), 1181-1191. <https://www.sciencedirect.com/science/article/pii/S1053810008000044>

Lopez, K. A., & Willis, D. G. (2004). Descriptive versus interpretive phenomenology: Their contributions to nursing knowledge. *Qualitative Health Research*, 14(5), 726-735. <https://journals.sagepub.com/doi/abs/10.1177/1049732304263638>

Lumley, M. A., Sklar, E. R., & Carty, J. N. (2012). Emotional disclosure interventions for chronic pain: from the laboratory to the clinic. *Translational Behavioral Medicine*, 2(1), 73-81. <https://academic.oup.com/tbm/article-abstract/2/1/73/4563282>

Lunghi, C., Tozzi, P., & Fusco, G. (2016). The biomechanical model in manual therapy: Is there an ongoing crisis or just the need to revise the underlying concept and application? *Journal of Bodywork and Movement Therapies*, 20(4), 784–799. <https://doi.org/10.1016/j.jbmt.2016.01.004>

MacCoun, R. J. (1998). Biases in the interpretation and use of research results. *Annual Review of Psychology*, 49(1), 259–287. <https://doi.org/10.1146/annurev.psych.49.1.259>

Mackenzie, J., Murray, E., & Lusher, J. (2018). Women's experiences of pregnancy related pelvic girdle pain: a systematic review. *Midwifery*, 56, 102-111. <https://doi.org/10.1016/j.midw.2017.10.011>

Mackey, S. (2005). Phenomenological nursing research: methodological insights derived from Heidegger's interpretive phenomenology. *International Journal of Nursing Studies*, 42(2), 179-186. <https://www.sciencedirect.com/science/article/pii/S002074890400118X>

MacLennan, A. H. (1991). The role of the hormone relaxin in human reproduction and pelvic girdle relaxation. *Scandinavian Journal of Rheumatology. Supplement*, 88, 7-15. <https://europepmc.org/article/med/2011710>

Madill, A., Gough, B., Lawton, R., & Stratton, P. (2005). How should we supervise qualitative projects? *The Psychologist*, 18(10), 616-618. <https://eprints.whiterose.ac.uk/1480/>

Majchrzycki, M., Mrozikiewicz, P. M., Kocur, P., Bartkowiak-Wieczorek, J., Hoffmann, M., Stryła, W., ... & Grześkowiak, E. (2010). Low back pain in pregnant women. *Ginekologia Polska*, 81(11). https://journals.viamedica.pl/ginekologia_polska/article/download/46409/33196

Maniadakis, N., & Gray, A. (2000). The economic burden of back pain in the UK. *Pain*, 84(1), 95-103. [https://www.academia.edu/download/44855886/Maniadakis N. Gray A. The economic burd20160418-7107-1tg5aie.pdf](https://www.academia.edu/download/44855886/Maniadakis_N._Gray_A._The_economic_burd20160418-7107-1tg5aie.pdf)

Mansour, A. R., Farmer, M. A., Baliki, M. N., & Apkarian, A. V. (2014). Chronic pain: the role of learning and brain plasticity. *Restorative Neurology and Neuroscience*, 32(1), 129-139. <https://content.iospress.com/articles/restorative-neurology-and-neuroscience/rnn139003>

Marnach, M. L., Ramin, K. D., Ramsey, P. S., Song, S. W., Stensland, J. J., & An, K. N. (2003). Characterization of the relationship between joint laxity and maternal hormones in

pregnancy. *Obstetrics & Gynecology*, 101(2), 331-335.
https://journals.lww.com/greenjournal/fulltext/2003/02000/Characterization_of_the_Relationship_Between_Joint.21.aspx/1000

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68(3), 438.
<https://mracllc.com/wp-content/uploads/2024/03/MRAC-Martin-2000-alliance-meta-analysis.pdf>

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68(3), 438.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68(3), 438.
<https://psycnet.apa.org/buy/2000-15699-009>

Mathieson, A., Brunton, L., & Wilson, P. M. (2025). The use of patient and public involvement and engagement in the design and conduct of implementation research: a scoping review. *Implementation Science Communications*, 6(1), Article 42. <https://doi.org/10.1186/s43058-025-00725-w>

McCarthy, C. J., Arnall, F. A., Strimpakos, N., Freemont, A., & Oldham, J. A. (2004). The biopsychosocial classification of non-specific low back pain: a systematic review. *Physical Therapy Reviews*, 9(1), 17-30.
<https://www.tandfonline.com/doi/abs/10.1179/108331904225003955>

McConnell-Henry, T., Chapman, Y., & Francis, K. (2009). Husserl and Heidegger: Exploring the disparity. *International Journal of Nursing Practice*, 15(1), 7-15.
<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1440-172X.2008.01724.x>

McCracken, L. M. (2013). Committed action: An application of the psychological flexibility model to activity patterns in chronic pain. *The Journal of Pain*, 14(8), 828-835.
<https://www.sciencedirect.com/science/article/pii/S1526590013008584>

McCracken, L. M., & Gutiérrez-Martínez, O. (2011). Processes of change in psychological flexibility in an interdisciplinary group-based treatment for chronic pain based on Acceptance and Commitment Therapy. *Behaviour Research And Therapy*, 49(4), 267-274. <http://www.behaviorpedia.com/wp-content/uploads/2013/04/ACT-chronic-pain.pdf>

McCracken, L. M., & Velleman, S. C. (2010). Psychological flexibility in adults with chronic pain: a study of acceptance, mindfulness, and values-based action in primary care. *Pain*, 148(1), 141-147.
<https://www.sciencedirect.com/science/article/pii/S0304395909006587>

McCracken, L. M., & Yang, S. Y. (2006). The role of values in a contextual cognitive-behavioral approach to chronic pain. *Pain, 123*(1-2), 137-145.
<https://www.sciencedirect.com/science/article/pii/S0304395906001126>

McCracken, L. M., Vowles, K. E., & Eccleston, C. (2004). Acceptance of chronic pain: component analysis and a revised assessment method. *Pain, 107*(1-2), 159-166.
https://www.academia.edu/download/47949511/Acceptance_of_chronic_pain_Component_ana20160810-28426-8etv1r.pdf

McCracken, L. M., Zayfert, C., & Gross, R. T. (1992). The Pain Anxiety Symptoms Scale: development and validation of a scale to measure fear of pain. *Pain, 50*(1), 67-73.
https://journals.lww.com/pain/abstract/1992/07000/The_pain_anxiety_symptoms_scale_development_and.9.aspx

McGrath, M. C. (2004). Clinical considerations of sacroiliac joint anatomy: a review of function, motion and pain. *Journal of Osteopathic Medicine, 7*(1), 16-24.
<https://www.sciencedirect.com/science/article/pii/S1443846104800054>

McGrath, M. C. (2013). From distinct to indistinct, the life cycle of a medical heresy. Is osteopathic distinctiveness an anachronism? *International Journal of Osteopathic Medicine, 16*(1), 54-61.
<https://doi.org/10.1016/j.ijosm.2012.08.004>

McGrath, R. L. (2022). 'Collapsed arches', 'ripped plantar fasciae', and 'heel spurs' : the painful language of plantar heel pain. *New Zealand Journal of Physiotherapy, 50*(2), 58-63.
<https://doi.org/10.15619/NZJP/50.2.02>

McParlin, Z., Cerritelli, F., Rossetini, G., Friston, K. J., & Esteves, J. E. (2022). Therapeutic alliance as active inference: the role of therapeutic touch and biobehavioural synchrony in musculoskeletal care. *Frontiers in Behavioral Neuroscience, 16*, 897247.
<https://www.frontiersin.org/articles/10.3389/fnbeh.2022.897247/full>

Mead, N., & Bower, P. (2000). Patient-centredness: a conceptual framework and review of the empirical literature. *Social Science & Medicine, 51*(7), 1087-1110.
<https://www.sciencedirect.com/science/article/pii/S0277953600000988>

Meints, S. M., & Edwards, R. R. (2018). Evaluating psychosocial contributions to chronic pain outcomes. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 87*, 168-182.
<https://www.sciencedirect.com/science/article/pii/S0278584617309855>

Melzer, K., Schutz, Y., Soehnchen, N., Othenin-Girard, V., de Tejada, B. M., Irion, O., ... & Kayser, B. (2010). Effects of recommended levels of physical activity on pregnancy outcomes. *American Journal of Obstetrics and Gynecology*, 202(3), 266-e1. <https://www.sciencedirect.com/science/article/pii/S0002937809020924>

Mercer, R. T. (2004). Becoming a mother versus maternal role attainment. *Journal of Nursing Scholarship*, 36(3), 226-232. <https://sigmapubs.onlinelibrary.wiley.com/doi/abs/10.1111/j.1547-5069.2004.04042.x>

Merleau-Ponty, M., Landes, D., Carman, T., & Lefort, C. (2013). *Phenomenology of Perception*. Routledge. <https://www.taylorfrancis.com/books/mono/10.4324/9780203720714/phenomenology-perception-maurice-merleau-ponty-donald-landes-taylor-carman-claude-lefort>

Mertens, D. M., Bazeley, P., Bowleg, L., Fielding, N., Maxwell, J., Molina-Azorin, J. F., & Niglas, K. (2016). Expanding thinking through a kaleidoscopic look into the future: Implications of the mixed methods international research association's task force report on the future of mixed methods. *Journal of Mixed Methods Research*, 10(3), 221-227. <https://journals.sagepub.com/doi/abs/10.1177/1558689816649719>

Messier, S. P. (1994). Osteoarthritis of the knee and associated factors of age and obesity: effects on gait. *Medicine and Science in Sports and Exercise*, 26(12), 1446-1452. <https://europepmc.org/article/med/7869877>

Miller, E. D., & Omarzu, J. (2014). New directions in loss research. In *Perspectives on loss* (pp. 3-20). Routledge.

Miller, F. G., & Kaptchuk, T. J. (2008). The power of context: reconceptualizing the placebo effect. *Journal of the Royal Society of Medicine*, 101(5), 222-225. <https://journals.sagepub.com/doi/abs/10.1258/jrsm.2008.070466>

Moffett, J. K., Torgerson, D., Bell-Syer, S., Jackson, D., Llewlyn-Phillips, H., Farrin, A., & Barber, J. (1999). Randomised controlled trial of exercise for low back pain: clinical outcomes, costs, and preferences. *British Medical Journal*, 319(7205), 279-283. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC28176/>

Mogren, I. (2006). Perceived health, sick leave, psychosocial situation, and sexual life in women with low-back pain and pelvic pain during pregnancy. *Acta Obstetrica et Gynecologica Scandinavica*, 85(6), 647-656. <https://www.tandfonline.com/doi/abs/10.1080/00016340600607297>

Mogren, I. M., & Pohjanen, A. I. (2005). Low back pain and pelvic pain during pregnancy: prevalence and risk factors. *Spine*, 30(8), 983-991. https://journals.lww.com/spinejournal/fulltext/2005/04150/Back_Pain_During_Pregnancy_A_Prosp_ective_Study.22.aspx

Mollard, E. (2015). Women's health locus of control during pregnancy may predict risk for postpartum depression. *Evidence-Based Nursing*, 18(3), 73-73 <https://ebn.bmj.com/content/18/3/73.extract>

Moran, R. (2013). Recognising patient-centred care in clinical trials of osteopathy-towards a more pragmatic approach. *International Journal of Osteopathic Medicine*, 16(2), 65-67. <https://doi.org/10.1016/j.ijosm.2013.04.003>

Morgan, D. L. (1997). *Focus groups as qualitative research* (Vol. 16). Sage Publications.

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76. <https://journals.sagepub.com/doi/abs/10.1177/2345678906292462>

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045-1053. <https://journals.sagepub.com/doi/abs/10.1177/1077800413513733>

Morgan, R., Luborsky, L., Crits-Christoph, P., Curtis, H., & Solomon, J. (1982). Predicting the outcomes of psychotherapy by the Penn Helping Alliance Rating Method. *Archives of General Psychiatry*, 39(4), 397-402. doi:10.1001/archpsyc.1982.04290040013002

Morgan, S., & Yoder, L. H. (2012). A concept analysis of person-centered care. *Journal of Holistic Nursing*, 30(1), 6-15. <https://journals.sagepub.com/doi/abs/10.1177/0898010111412189>

Morken, T., Riise, T., Moen, B., Hauge, S. H., Holien, S., Langedrag, A., ... & Thoppil, V. (2003). Low back pain and widespread pain predict sickness absence among industrial workers. *BMC Musculoskeletal Disorders*, 4, 1-8. <https://link.springer.com/article/10.1186/1471-2474-4-21>

Morone, N. E., Greco, C. M., & Weiner, D. K. (2008). Mindfulness meditation for the treatment of chronic low back pain in older adults: a randomized controlled pilot study. *Pain*, 134(3), 310-319. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2254507/>

Moseley, G. L. (2004). Evidence for a direct relationship between cognitive and physical change during an education intervention in people with chronic low back pain. *European Journal of Pain*, 8(1), 39-45. <http://mtitx.com/wp-content/uploads/2016/05/European-Journal-of-Pain-2012-Moseley.pdf>

Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, 18(1), 143. <https://link.springer.com/article/10.1186/s12874-018-0611-x>

Murphy, D. R., & Hurwitz, E. L. (2007). A theoretical model for the development of a diagnosis-based clinical decision rule for the management of patients with spinal pain. *BMC Musculoskeletal Disorders*, 8, 1-11. <https://doi.org/10.1186/1471-2474-8-75>

Murphy, M., Savage, E., O'Donoghue, K., Leary, J. O., & Leahy-Warren, P. (2021). Trying to conceive: An interpretive phenomenological analysis of couples' experiences of pregnancy after stillbirth. *Women and Birth*, 34(5), e475-e481. <https://www.sciencedirect.com/science/article/pii/S1871519220303735>

Murray, C. J., & Lopez, A. D. (2013). Measuring the global burden of disease. *New England Journal of Medicine*, 369(5), 448-457. <https://www.nejm.org/doi/pdf/10.1056/nejmra1201534>

Najm, W. I., Seffinger, M. A., Mishra, S. I., Dickerson, V. M., Adams, A., Reinsch, S., ... & Goodman, A. F. (2003). Content validity of manual spinal palpatory exams-A systematic review. *BMC Complementary and Alternative Medicine*, 3, 1-14. <https://link.springer.com/content/pdf/10.1186/1472-6882-3-1.pdf>

National Health Service. (2024, September 4). *Osteopathy: overview*. NHS. <https://www.nhs.uk/conditions/osteopathy/>

National Institute for Health and Care Research. (2023). *Guidance on applying for feasibility studies*. National Institute for Health and Care Research. <https://www.nihr.ac.uk/guidance-applying-feasibility-studies>

Neblett, R., Mayer, T. G., Hartzell, M. M., Williams, M. J., & Gatchel, R. J. (2016). The Fear-avoidance Components Scale (FACS): Development and Psychometric Evaluation of a New Measure of Pain-related Fear Avoidance. *Pain Practice*, 16(4), 435–450. <https://doi.org/10.1111/papr.12333>

Neto, H. P., Bicalho, E., & Bortolazzo, G. (2021). Interoception and emotion: a potential mechanism for intervention with manual treatment. *Cureus*, 13(6). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8312802/>

Newell, D., Lothe, L. R., & Raven, T. J. L. (2017). Contextually Aided Recovery (CARE): a scientific theory for innate healing. *Chiropractic & Manual Therapies*, 25(1), 6–6. <https://doi.org/10.1186/s12998-017-0137-z>

Newton-John, T. R., Spence, S. H., & Schotte, D. (1995). Cognitive-behavioural therapy versus EMG biofeedback in the treatment of chronic low back pain. *Behaviour Research and Therapy*, 33(6), 691-697. https://www.academia.edu/download/69274715/0005-7967_2895_2900008-l20210909-21603-124jh57.pdf

Neziri, A. Y., Haesler, S., Petersen-Felix, S., Müller, M., Arendt-Nielsen, L., Manresa, J. B., ... & Curatolo, M. (2010). Generalized expansion of nociceptive reflex receptive fields in chronic pain patients. *Pain*, 151(3), 798-805. https://www.academia.edu/download/43676083/Generalized_expansion_of_nociceptive_ref20160313-17882-1obw560.pdf

Nicholas, M. K., Linton, S. J., Watson, P. J., Main, C. J., & “Decade of the Flags” Working Group. (2011). Early identification and management of psychological risk factors (“yellow flags”) in patients with low back pain: a reappraisal. *Physical Therapy*, 91(5), 737-753. <https://academic.oup.com/ptj/article-pdf/91/5/737/17504277/ptj0737.pdf>

Nicholls, D. A. (2024). What is wrong with osteopathy? A response to Thomson and MacMillan. *International Journal of Osteopathic Medicine*, 51, 100694-. <https://doi.org/10.1016/j.ijosm.2023.100694>

Niedenthal, P. M. (2007). Embodying emotion. *Science*, 316(5827), 1002-1005. <https://www.science.org/doi/abs/10.1126/science.1136930>

Nishigami, T., Mibu, A., Osumi, M., Son, K., Yamamoto, S., Kajiwarra, S., ... & Tanabe, A. (2015). Are tactile acuity and clinical symptoms related to differences in perceived body image in patients with chronic nonspecific lower back pain?. *Manual Therapy*, 20(1), 63-67. <https://www.sciencedirect.com/science/article/pii/S1356689X14001325>

Nistler, G., Deutschmann, U., Lenz, D., & Schwerla, F. (2010). Osteopathy as a therapy during pregnancy: A randomised controlled trial. *International Journal of Osteopathic Medicine*, 13(3), 128. [https://www.journalofosteopathicmedicine.com/article/S1746-0689\(10\)00082-9/abstract](https://www.journalofosteopathicmedicine.com/article/S1746-0689(10)00082-9/abstract)

- Noll, D. R. (2015). Evidence-based medicine and osteopathic medicine: no paradox. *Journal of Osteopathic Medicine*, 115(3), 124-125.
<https://www.degruyter.com/document/doi/10.7556/jaoa.2015.024/html>
- Noll, D. R. (2016). The potential of osteopathic manipulative treatment in antimicrobial stewardship: a narrative review. *Journal of Osteopathic Medicine*, 116(9), 600-608.
<https://www.degruyter.com/document/doi/10.7556/jaoa.2016.119/html>
- Nordby, H. (2008). Medical explanations and lay conceptions of disease and illness in doctor–patient interaction. *Theoretical Medicine and Bioethics*, 29(6), 357-370.
<https://link.springer.com/article/10.1007/s11017-008-9080-2>
- Norén, L., Östgaard, S., Johansson, G., & Östgaard, H. C. (2002). Lumbar back and posterior pelvic pain during pregnancy: a 3-year follow-up. *European Spine Journal*, 11, 267-271.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3610523/pdf/586_2002_Article_357.pdf
- Norman, G. R., Sloan, J. A., & Wyrwich, K. W. (2003). Interpretation of changes in health-related quality of life: the remarkable universality of half a standard deviation. *Medical Care*, 41(5), 582-592.
https://journals.lww.com/lww-medicalcare/fulltext/2003/05000/Linking_Clinical_Relevance_and_Statistical.00004.aspx
- Novick, G. (2009). Women's experience of prenatal care: an integrative review. *Journal of Midwifery & Women's Health*, 54(3), 226-237.
<https://www.sciencedirect.com/science/article/pii/S1526952309000452>
- O'Sullivan, P. B., & Beales, D. J. (2007). Diagnosis and classification of pelvic girdle pain disorders, Part 2: illustration of the utility of a classification system via case studies. *Manual Therapy*, 12(2), e1-e12.
<https://www.sciencedirect.com/science/article/pii/S1356689X07000720>
- Office of Population Censuses and Surveys. (1994). *The prevalence of back pain in Britain, London: HMSO, 1994.*
- Ogborne, A. C. (1995). Unhelpful divide but important distinction. *Addiction*, 90(6), 755–757.
- Ogden, J., Bavalia, K., Bull, M., Frankum, S., Goldie, C., Gossiau, M., Jones, A., Kumar, S., & Vasant, K. (2004). “I want more time with my doctor”: a quantitative study of time and the consultation. *Family Practice*, 21(5), 479–483. <https://doi.org/10.1093/fampra/cmh502>

Olmos-Vega, F. M., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2023). A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical Teacher*, 45(3), 241–251. <https://www.tandfonline.com/doi/abs/10.1080/0142159X.2022.2057287>

Olsson, C. B., Grooten, W. J., Nilsson-Wikmar, L., Harms-Ringdahl, K., & Lundberg, M. (2012). Catastrophizing during and after pregnancy: associations with lumbopelvic pain and postpartum physical ability. *Physical Therapy*, 92(1), 49–57. <https://academic.oup.com/ptj/article-pdf/92/1/49/31671060/ptj0049.pdf>

Olsson, C., & Nilsson-Wikmar, L. (2004). Health-related quality of life and physical ability among pregnant women with and without back pain in late pregnancy. *Acta Obstetrica et Gynecologica Scandinavica*, 83(4), 351–357. <https://obgyn.onlinelibrary.wiley.com/doi/pdf/10.1111/j.0001-6349.2004.00384.x>

Ortlipp, M. (2008). Keeping and Using Reflective Journals in the Qualitative Research Process. *Qualitative Report*, 13(4), 695–705. https://www.researchgate.net/profile/Jayakaran-Mukundan/publication/269793669_Elements_of_Young_Adult_Literature_in_Texts_Used_in_Malaysian_Secondary_Schools/links/561b881608ae6d17308ae886/Elements-of-Young-Adult-Literature-in-Texts-Used-in-Malaysian-Secondary-Schools.pdf

Osborn, M., & Smith, J. A. (1998). The personal experience of chronic benign lower back pain: An interpretative phenomenological analysis. *British Journal of Health Psychology*, 3(1), 65–83. <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=23e999f330e1b51c05d16fbf55aa5cc1277d8518>

Osborn, M., & Smith, J. A. (2006). Living with a body separate from the self. The experience of the body in chronic benign low back pain: an interpretative phenomenological analysis. *Scandinavian Journal of Caring Sciences*, 20(2), 216–222. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1471-6712.2006.00399.x>

Östgaard, H. C., Andersson, G. B. J., Schultz, A. B., & Miller, J. A. A. (1993). Influence of some biomechanical factors on low-back pain in pregnancy. *Spine*, 18(1), 61–65. https://journals.lww.com/spinejournal/abstract/1993/01000/Influence_of_Some_Biomechanical_Factors_on.10.aspx

Paley, J. (1997). Husserl, phenomenology and nursing. *Journal of Advanced Nursing*, 26(1), 187–193. <https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1365-2648.1997.1997026187.x>

Palmer, M., Larkin, M., De Visser, R., & Fadden, G. (2010). Developing an interpretative phenomenological approach to focus group data. *Qualitative Research in Psychology*, 7(2), 99-121. <https://www.tandfonline.com/doi/abs/10.1080/14780880802513194>

Palsson, T. S., Beales, D., Slater, H., O'Sullivan, P., & Graven-Nielsen, T. (2015). Pregnancy is characterized by widespread deep-tissue hypersensitivity independent of lumbopelvic pain intensity, a facilitated response to manual orthopedic tests, and poorer self-reported health. *The Journal of Pain*, 16(3), 270-282. <https://www.sciencedirect.com/science/article/pii/S1526590014010839>

Parsons, J. (2006). *Osteopathy: models for diagnosis, treatment and practice* (N. Marcer, Ed.). Elsevier.

Pavani, F., & Galfano, G. (2015). The multisensory body revealed through its cast shadows. *Frontiers in Psychology*, 6, 666. <https://www.frontiersin.org/articles/10.3389/fpsyg.2015.00666/full>

Peirs, C., Williams, S. P. G., Zhao, X., Walsh, C. E., Gedeon, J. Y., Cagle, N. E., ... & Seal, R. P. (2015). Dorsal horn circuits for persistent mechanical pain. *Neuron*, 87(4), 797-812. [https://www.cell.com/neuron/fulltext/S0896-6273\(15\)00671-6?elsca1=etoc&elsca2=email&elsca3=0896-6273_20150819_87_4_&elsca4=Cell+Press](https://www.cell.com/neuron/fulltext/S0896-6273(15)00671-6?elsca1=etoc&elsca2=email&elsca3=0896-6273_20150819_87_4_&elsca4=Cell+Press)

Penner, F., & Rutherford, H. J. (2022). Emotion regulation during pregnancy: A call to action for increased research, screening, and intervention. *Archives of Women's Mental Health*, 25(2), 527-531. <https://link.springer.com/article/10.1007/s00737-022-01204-0>

Penney, J. N. (2010). The biopsychosocial model of pain and contemporary osteopathic practice. *International Journal of Osteopathic Medicine*, 13(2), 42-47. <https://www.sciencedirect.com/science/article/pii/S1746068910000210>

Persson, M., Winkvist, A., Dahlgren, L., & Mogren, I. (2013). "Struggling with daily life and enduring pain": a qualitative study of the experiences of pregnant women living with pelvic girdle pain. *BMC Pregnancy and Childbirth*, 13(1), 111-111. <https://doi.org/10.1186/1471-2393-13-111>

Petticrew, M., Anderson, L., Elder, R., Grimshaw, J., Hopkins, D., Hahn, R., ... & Welch, V. (2013). Complex interventions and their implications for systematic reviews: a pragmatic approach. *Journal of clinical epidemiology*, 66(11), 1209-1214. <https://doi.org/10.1016/j.jclinepi.2013.06.004>

Pezzulo, G., Barsalou, L. W., Cangelosi, A., Fischer, M. H., McRae, K., & Spivey, M. J. (2013). Computational Grounded Cognition: a new alliance between grounded cognition and computational modeling. *Frontiers in Psychology*, 3, 612-612. <https://doi.org/10.3389/fpsyg.2012.00612>

Phelps, C. E., Navratilova, E., & Porreca, F. (2021). Cognition in the chronic pain experience: Preclinical insights. *Trends in Cognitive Sciences*, 25(5), 365-376. [https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613\(21\)00003-6](https://www.cell.com/trends/cognitive-sciences/fulltext/S1364-6613(21)00003-6)

Phillips E., Montague J., Archer S. (2016). Worlds within worlds: A strategy for using interpretative phenomenological analysis with focus groups. *Qualitative Research in Psychology*, 13(4), 289–302. <https://www.tandfonline.com/doi/abs/10.1080/14780887.2016.1205692>

Phillips, D. (2023, March). *Chiropractic for lower back pain*. BUPA. <https://www.bupa.co.uk/health-information/muscles-bones-joints/chiropractic>

Pietkiewicz, I., & Smith, J. A. (2012). Praktyczny przewodnik interpretacyjnej analizy fenomenologicznej w badaniach jakościowych w psychologii. *Czasopismo Psychologiczne*, 18(2), 361-369. https://www.researchgate.net/profile/Igor-Pietkiewicz/publication/235917993_Praktyczny_przewodnik_interpretacyjnej_analizy_fenomenologicznej_w_badaniach_jakosciowych_w_psychologii/links/00463514235f5564c4000000/Praktyczny-przewodnik-interpretacyjnej-analizy-fenomenologicznej-w-badaniach-jakosciowych-w-psychologii.pdf

Pietkiewicz, I., & Smith, J. A. (2014). A practical guide to using interpretative phenomenological analysis in qualitative research psychology. *Psychological journal*, 20(1), 7-14. https://www.academia.edu/download/34864480/2014_Pietkiewicz_Smith_-_A_practical_guide_to_using_IPA.pdf

Pincus, T., & McCracken, L. M. (2013). Psychological factors and treatment opportunities in low back pain. *Best Practice & Research Clinical Rheumatology*, 27(5), 625-635. <https://www.sciencedirect.com/science/article/pii/S1521694213000740>

Pincus, T., & Morley, S. (2001). Cognitive-processing bias in chronic pain: a review and integration. *Psychological Bulletin*, 127(5), 599. <https://psycnet.apa.org/record/2001-18164-002>

Pincus, T., Burton, A. K., Vogel, S., & Field, A. P. (2002). A systematic review of psychological factors as predictors of chronicity/disability in prospective cohorts of low back pain. *Spine*, 27(5), E109-E120. https://journals.lww.com/spinejournal/fulltext/2002/03010/A_Systematic_Review_of_Psychological_Factors_as.17.aspx

Pincus, T., Holt, N., Vogel, S., Underwood, M., Savage, R., Walsh, D. A., & Taylor, S. J. C. (2013). Cognitive and affective reassurance and patient outcomes in primary care: A systematic review. *Pain*, 154(11), 2407–2416. <https://doi.org/10.1016/j.pain.2013.07.019>

Plunkett, A., Fawkes, C., & Carnes, D. (2022). Osteopathic practice in the United Kingdom: A retrospective analysis of practice data. *PLoS One*, 17(7), e0270806. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0270806>

Price, B. B., Amini, S. B., & Kappeler, K. (2012). Exercise in pregnancy: effect on fitness and obstetric outcomes—a randomized trial. *Medicine & Science in Sports & Exercise*, 44(12), 2263-2269. <https://pauogentil.com/pdf/Exercise%20in%20Pregnancy%20-%20Effect%20on%20Fitness%20and%20Obstetric%20Outcomes—A%20Randomized%20Trial.pdf>

PuenteDura, E. J., & Flynn, T. (2016). Combining manual therapy with pain neuroscience education in the treatment of chronic low back pain: A narrative review of the literature. *Physiotherapy Theory and Practice*, 32(5), 408-414. <https://www.tandfonline.com/doi/abs/10.1080/09593985.2016.1194663>

Pulvirenti, M., McMillan, J., & Lawn, S. (2014). Empowerment, patient centred care and self-management. *Health Expectations*, 17(3), 303-310. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1369-7625.2011.00757.x>

Quartana, P. J., Campbell, C. M., & Edwards, R. R. (2009). Pain catastrophizing: a critical review. *Expert Review of Neurotherapeutics*, 9(5), 745-758. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2696024/>

Ramond, A., Bouton, C., Richard, I., Roquelaure, Y., Baufreton, C., Legrand, E., & Huez, J. F. (2011). Psychosocial risk factors for chronic low back pain in primary care—a systematic review. *Family Practice*, 28(1), 12-21. <https://academic.oup.com/fampra/article-abstract/28/1/12/498957>

Reed, D. E., Cobos, B., Nagpal, A. S., Eckmann, M., & McGeary, D. D. (2022). The role of identity in chronic pain cognitions and pain-related disability within a clinical chronic pain population. *The International Journal of Psychiatry in Medicine*, 57(1), 35-52. <https://journals.sagepub.com/doi/abs/10.1177/0091217421989141>

Rees, C. E., Crampton, P. E., & Monrouxe, L. V. (2020). Re-visioning academic medicine through a constructionist lens. *Academic Medicine*, 95(6), 846-850. https://journals.lww.com/academicmedicine/fulltext/2020/06000/re_visioning_academic_medicine_through_a.24.aspx/

- Reid, A.-M., Brown, J. M., Smith, J. M., Cope, A. C., & Jamieson, S. (2018). Ethical dilemmas and reflexivity in qualitative research. *Perspectives on Medical Education*, 7(2), 69–75. <https://link.springer.com/article/10.1007/S40037-018-0412-2>
- Reid, K., Flowers, P., & Larkin, M. (2005). Exploring lived experience. *The Psychologist*, 18 (1), 20–23. <https://goo.gl/9ScDxi>
- Riessman, C. K. (2008). *Narrative Methods for the Human Sciences*. Sage Publications.
- Rimondini, M., Del Piccolo, L., Goss, C., Mazzi, M., Paccaloni, M., & Zimmermann, C. (2006). Communication skills in psychiatry residents – how do they handle patient concerns? *Psychotherapy and Psychosomatics*, 75(3), 161–169. <https://doi.org/10.1159/000091773>
- Ritchie, J., Lewis, J., McNaughton Nicholls, C., & Ormston, R. (Eds.). (2014). *Qualitative research practice : a guide for social science students and researchers* (Second edition.). SAGE Publications Limited.
- Robertson, K. (2005). Active listening: more than just paying attention. *Australian Family Physician*, 34(12). <https://search.informit.org/doi/abs/10.3316/informit.366629010280498>
- Robinson, H. S., Mengshoel, A. M., Bjelland, E. K., & Vøllestad, N. K. (2010). Pelvic girdle pain, clinical tests and disability in late pregnancy. *Manual Therapy*, 15(3), 280-285. <https://www.academia.edu/download/39099652/0deec52af0823852a3000000.pdf>
- Rodríguez-Nogueira, Ó., Leirós-Rodríguez, R., Pinto-Carral, A., Álvarez-Álvarez, M. J., Morera-Balaguer, J., & Moreno-Poyato, A. R. (2022). The association between empathy and the physiotherapy–patient therapeutic alliance: A cross-sectional study. *Musculoskeletal Science & Practice*, 59(NA), 102557. <https://doi.org/10.1016/j.msksp.2022.102557>
- Roffey, D. M., Wai, E. K., Bishop, P., Kwon, B. K., & Dagenais, S. (2010). Causal assessment of occupational sitting and low back pain: results of a systematic review. *The Spine Journal*, 10(3), 252–261. <https://doi.org/10.1016/j.spinee.2009.12.005>
- Roots, S. A., Niven, E., & Moran, R. W. (2016). Osteopaths’ clinical reasoning during consultation with patients experiencing acute low back pain: A qualitative case study approach. *International Journal of Osteopathic Medicine*, 19, 20–34. <https://doi.org/10.1016/j.ijosm.2015.06.003>

- Rossetтини, G., Carlino, E., & Testa, M. (2018). Clinical relevance of contextual factors as triggers of placebo and nocebo effects in musculoskeletal pain. *BMC Musculoskeletal Disorders*, 19(1), 27–27. <https://doi.org/10.1186/s12891-018-1943-8>
- Roth, W. D., & Mehta, J. D. (2002). The Rashomon effect: Combining positivist and interpretivist approaches in the analysis of contested events. *Sociological Methods & Research*, 31(2), 131-173. <https://journals.sagepub.com/doi/abs/10.1177/0049124102031002002>
- Roulston, K. (2001). Data analysis and ‘theorizing as ideology’. *Qualitative Research*, 1(3), 279-302. <https://journals.sagepub.com/doi/abs/10.1177/146879410100100302>
- Ryan, G. W., & Bernard, H. R. (2000). Data management and analysis methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 769–802). Sage Publications.
- Sabino, J., & Grauer, J. N. (2008). Pregnancy and low back pain. *Current Reviews in Musculoskeletal Medicine*, 1, 137-141. <https://link.springer.com/content/pdf/10.1007/s12178-008-9021-8.pdf>
- Sadeh, A., Keinan, G., & Daon, K. (2004). Effects of stress on sleep: the moderating role of coping style. *Health Psychology*, 23(5), 542. <https://psycnet.apa.org/fulltext/2004-18051-014.html>
- Safran, J. D., Muran, J. C., Samstag, L. W., & Stevens, C. (2001). Repairing alliance ruptures. *Psychotherapy: Theory, Research, Practice, Training*, 38(4), 406. <https://doi.org/10.1037/0033-3204.38.4.406>
- Sagui-Henson, S. J., Welcome Chamberlain, C. E., Smith, B. J., Li, E. J., Castro Sweet, C., & Altman, M. (2022). Understanding components of therapeutic alliance and well-being from use of a global digital mental health benefit during the COVID-19 pandemic: longitudinal observational study. *Journal of Technology in Behavioral Science*, 7(4), 439-450. <https://link.springer.com/content/pdf/10.1007/s41347-022-00263-5.pdf>
- Salmon, P., Mendick, N., & Young, B. (2011). Integrative qualitative communication analysis of consultation and patient and practitioner perspectives: Towards a theory of authentic caring in clinical relationships. *Patient Education and Counselling*, 82(3), 448–454. <https://www.tandfonline.com/doi/full/10.3109/17453674.2015.1022707>
- Sanabria-Mazo, J. P., Colomer-Carbonell, A., Borràs, X., Castaño-Asins, J. R., McCracken, L. M., Montero-Marin, J., ... & Luciano, J. V. (2023). Efficacy of videoconference group acceptance and commitment therapy (ACT) and behavioral activation therapy for depression (BATD) for chronic low back pain (CLBP)

plus comorbid depressive symptoms: a randomized controlled trial (IMPACT study). *The Journal of Pain*, 24(8), 1522-1540. <https://doi.org/10.1016/j.jpain.2023.04.008>

Sandelowski, M. (2000). Focus on research methods: Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340. [https://onlinelibrary.wiley.com/doi/abs/10.1002/1098-240X\(200008\)23:4%3C334::AID-NUR9%3E3.0.CO;2-G](https://onlinelibrary.wiley.com/doi/abs/10.1002/1098-240X(200008)23:4%3C334::AID-NUR9%3E3.0.CO;2-G)

Saracutu, M., Rance, J., Davies, H., & Edwards, D. J. (2018). The effects of osteopathic treatment on psychosocial factors in people with persistent pain: A systematic review. *International Journal of Osteopathic Medicine*, 27, 23–33. <https://doi.org/10.1016/j.ijosm.2017.10.005>

Sato, T., Narita, T., Hirano, S., Kusunoki, K., Goto, M., Sakado, K., & Uehara, T. (2001). Factor validity of the temperament and character inventory in patients with major depression. *Comprehensive Psychiatry*, 42(4), 337-341. <https://www.sciencedirect.com/science/article/pii/S00104440X01884340>

Saunders, S. M., Howard, K. I., & Orlinsky, D. E. (1989). The Therapeutic Bond Scales: Psychometric characteristics and relationship to treatment effectiveness. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1(4), 323–330. <https://doi.org/10.1037/1040-3590.1.4.323>

Savigny, P., Watson, P., & Underwood, M. (2009). Early management of persistent non-specific low back pain: summary of NICE guidance. *British medical Journal*, 338. <https://www.bmj.com/content/338/bmj.b1805.long>

Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge.

Schütze, R., Rees, C., Preece, M., & Schütze, M. (2010). Low mindfulness predicts pain catastrophizing in a fear-avoidance model of chronic pain. *Pain*, 148(1), 120-127. <https://fitaal.nl/static/default/tigra/Cursusinformatie/9-OOOOKernLow-mindfulness-predicts-pain-catastrophiz.pdf>

Seale, C., Ziebland, S., & Charteris-Black, J. (2006). Gender, cancer experience and internet use: a comparative keyword analysis of interviews and online cancer support groups. *Social Science & Medicine*, 62(10), 2577-2590. <https://www.sciencedirect.com/science/article/pii/S027795360500609X>

Seffinger, M. A., King, H. H., Ward, R. C., Jones, J. M., Rogers, F. J., & Patterson, M. M. (2003). Osteopathic philosophy. *Foundations For Osteopathic Medicine*, 2, 3-18. <https://masjafick.nl/wp-content/uploads/2017/04/Osteopathic-philosophy-and-history.pdf>

Seffinger, M. A., Najm, W. I., Mishra, S. I., Adams, A., Dickerson, V. M., Murphy, L. S., & Reinsch, S. (2004). Reliability of spinal palpation for diagnosis of back and neck pain: a systematic review of the literature. *Spine*, 29(19), E413-E425. https://journals.lww.com/spinejournal/fulltext/2004/10010/reliability_of_spinal_palpation_for_diagnosis_of.22.aspx

Seglem, K. B., Ørstavik, R., Torvik, F. A., Gjerde, L. C., Røysamb, E., Reichborn-Kjennerud, T., ... & Tambs, K. (2017). Pre-pregnancy mental distress and musculoskeletal pain and sickness absence during pregnancy—a twin cohort study. *The European Journal of Public Health*, 27(3), 477-481. <https://academic.oup.com/eurpub/article-abstract/27/3/477/2975332>

Senécal, J., Xiong, X., Fraser, W. D., & PEOPLE (Pushing Early Or Pushing Late with Epidural) study group. (2005). Effect of fetal position on second-stage duration and labor outcome. *Obstetrics & Gynecology*, 105(4), 763-772. https://journals.lww.com/greenjournal/FullText/2005/04000/Effect_of_Fetal_Position_on_Second_Stage_Duration.14.aspx

Setchell, J., Costa, N., Ferreira, M., Makovey, J., Nielsen, M., & Hodges, P. W. (2017). Individuals' explanations for their persistent or recurrent low back pain: a cross-sectional survey. *BMC Musculoskeletal Disorders*, 18, 1-9. <https://link.springer.com/article/10.1186/s12891-017-1831-7>

Setse, R., Grogan, R., Pham, L., Cooper, L. A., Strobino, D., Powe, N. R., & Nicholson, W. (2009). Longitudinal study of depressive symptoms and health-related quality of life during pregnancy and after delivery: the Health Status in Pregnancy (HIP) study. *Maternal and Child Health Journal*, 13, 577-587. <https://link.springer.com/article/10.1007/s10995-008-0392-7>

Shapiro, M., Sujan, A. C., & Guille, C. (2022). A clinical trial of a program for pain management and opioid reduction during pregnancy. *Reproductive Sciences*, 29(2), 606-613. <https://doi.org/10.1007/s43032-021-00701-4>

Shaw, W. S., Hartvigsen, J., Woiszwilllo, M. J., Linton, S. J., & Reme, S. E. (2016). Psychological distress in acute low back pain: a review of measurement scales and levels of distress reported in the first 2 months after pain onset. *Archives of Physical Medicine and Rehabilitation*, 97(9), 1573-1587. <https://www.sciencedirect.com/science/article/pii/S0003999316001337>

Shepherd, J. (2005). Symphysis pubis dysfunction: a hidden cause of morbidity. *British Journal of Midwifery*, 13(5), 301-307. <https://doi.org/10.12968/bjom.2005.13.5.18092>

Sheraton, A., Streckfuss, J., & Grace, S. (2018). Experiences of pregnant women receiving osteopathic care. *Journal of Bodywork and Movement Therapies*, 22(2), 321-327. <https://doi.org/10.1016/j.jbmt.2017.09.007>

Sheraton, A., Streckfuss, J., & Grace, S. (2018). Experiences of pregnant women receiving osteopathic care. *Journal of bodywork and movement therapies*, 22(2), 321-327. <https://doi.org/10.1016/j.jbmt.2017.09.007>

Shiri, R., Karppinen, J., Leino-Arjas, P., Solovieva, S., & Viikari-Juntura, E. (2010). The association between obesity and low back pain: a meta-analysis. *American Journal of Epidemiology*, 171(2), 135-154. <https://academic.oup.com/aje/article-pdf/171/2/135/17338448/kwp356.pdf>

Simpson, R. G., & Eaves, R. C. (1985). Do We Need More Qualitative Research or More Good Research? A Reaction to Stainback and Stainback. *Exceptional Children*, 51(4), 325-329. <https://journals.sagepub.com/doi/abs/10.1177/001440298405100408>

Sjödahl, J., Gutke, A., & Öberg, B. (2013). Predictors for long-term disability in women with persistent postpartum pelvic girdle pain. *European Spine Journal*, 22, 1665-1673. <https://link.springer.com/article/10.1007/s00586-013-2716-6>

Skargren, E. I., Öberg, B. E., Carlsson, P. G., & Gade, M. (1997). Cost and effectiveness analysis of chiropractic and physiotherapy treatment for low back and neck pain: six-month follow-up. *Spine*, 22(18), 2167-2177. https://journals.lww.com/spinejournal/fulltext/1997/09150/Cost_and_Effectiveness_Analysis_of_Chiropractic.15.aspx

Skulmoski, G. J., Hartman, F. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education: Research*, 6(1), 1-21. https://www.learntechlib.org/p/111405/article_111405.pdf

Slade, S. C., Molloy, E., & Keating, J. L. (2009). Stigma experienced by people with nonspecific chronic low back pain: a qualitative study. *Pain Medicine*, 10(1), 143-154. <https://academic.oup.com/painmedicine/article-abstract/10/1/143/1834374>

Smeets, R. J., Vlaeyen, J. W., Kester, A. D., & Knottnerus, J. A. (2006). Reduction of pain catastrophizing mediates the outcome of both physical and cognitive-behavioral treatment in chronic low back pain. *The Journal of Pain*, 7(4), 261-271. <https://www.sciencedirect.com/science/article/pii/S1526590005009582>

Smith, D. (2019). Reflecting on new models for osteopathy—it's time for change. *International Journal of Osteopathic Medicine*, 31, 15-20. <https://www.sciencedirect.com/science/article/pii/S1746068918300373>

Smith, J. A. (1996). Beyond the divide between cognition and discourse: Using interpretative phenomenological analysis in health psychology. *Psychology and Health*, 11(2), 261-271. <https://www.tandfonline.com/doi/abs/10.1080/08870449608400256>

Smith, J. A., & Osborn, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative Psychology: A Practical Guide to Research Methods* (pp. 53–80). Sage Publications.

Smith, J. A., & Osborn, M. (2007). Pain as an assault on the self: An interpretative phenomenological analysis of the psychological impact of chronic benign low back pain. *Psychology & Health*, 22(5), 517–534. <https://www.tandfonline.com/doi/abs/10.1080/14768320600941756>

Smith, J. A., & Osborn, M. (2015). Interpretative phenomenological analysis as a useful methodology for research on the lived experience of pain. *British Journal of Pain*, 9(1), 41-42. <https://journals.sagepub.com/doi/abs/10.1177/2049463714541642>

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method, and research*. Sage Publications.

Smith, J. A., Flowers, P., & Larkin, M. (2022). *Interpretative phenomenological analysis: theory, method and research* (2nd edition.). SAGE.

Smith, J. A., Jarman, M., & Osborn, M. (1999). Doing interpretative phenomenological analysis. *Qualitative Health Psychology: Theories and Methods*, 1(1), 218-240. <https://www.torrossa.com/en/resources/an/4913037#page=229>

Smithson, J. (2000). Using and analysing focus groups: Limitations and possibilities. *International Journal of Social Research Methodology*, 3(2), 103–119. <https://doi.org/10.1080/136455700405172>

Snelgrove, S., & Liossi, C. (2009). An interpretative phenomenological analysis of living with chronic low back pain. *British Journal of Health Psychology*, 14(4), 735-749. <https://bpspsychub.onlinelibrary.wiley.com/doi/abs/10.1348/135910709X402612>

Snelgrove, S., & Liossi, C. (2013). Living with chronic low back pain: a metasynthesis of qualitative research. *Chronic Illness*, 9(4), 283-301. <https://journals.sagepub.com/doi/abs/10.1177/1742395313476901>

Snelgrove, S., Edwards, S., & Liossi, C. (2013). A longitudinal study of patients' experiences of chronic low back pain using interpretative phenomenological analysis: changes and consistencies. *Psychology & Health*, 28(2), 121-138. <https://www.tandfonline.com/doi/abs/10.1080/08870446.2011.630734>

Snider, E. J., Pamperin, K., Johnson, J. C., Shurtz, N. R., & Degenhardt, B. F. (2014). Assessing palpation thresholds of osteopathic medical students using static models of the lumbar spine. *Journal of Osteopathic Medicine*, 114(6), 460-469. <https://www.degruyter.com/document/doi/10.7556/jaoa.2014.096/html>

Søndenå, P., Dalusio-King, G., & Hebron, C. (2020). Conceptualisation of the therapeutic alliance in physiotherapy: is it adequate? *Musculoskeletal Science & Practice*, 46(NA), 102131. <https://doi.org/10.1016/j.msksp.2020.102131>

South Tees Hospital. (2022, January 12). *What happens during an appointment?* NHS. <https://www.southtees.nhs.uk/services/physiotherapy/community-outpatient-physiotherapy-hambleton-richmondshire/what-happens-during-an-appointment/>

Spanos, N. P., Radtke-Bodorik, H. L., Ferguson, J. D., & Jones, B. (1979). The effects of hypnotic susceptibility, suggestions for analgesia, and the utilization of cognitive strategies on the reduction of pain. *Journal Of Abnormal Psychology*, 88(3), 282. <https://psycnet.apa.org/record/1979-25275-001>

Spiegel, K., Leproult, R., & Van Cauter, E. (1999). Impact of sleep debt on metabolic and endocrine function. *The Lancet*, 354(9188), 1435-1439. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(99\)01376-8/fulltext?cc=y%3D](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(99)01376-8/fulltext?cc=y%3D)

Sposato, N. S., & Bjerså, K. (2017). Experiences of intervertebral motion palpation in osteopathic practice - A qualitative interview study among Swedish osteopaths. *Journal of Bodywork and Movement Therapies*, 21(1), 101-108. <https://doi.org/10.1016/j.jbmt.2016.05.008>

Stark, J. E. (2013). An historical perspective on principles of osteopathy. *International Journal of Osteopathic Medicine*, 16(1), 3-10.
<https://www.sciencedirect.com/science/article/pii/S1746068912000752>

Steel, A., Sundberg, T., Reid, R., Ward, L., Bishop, F. L., Leach, M., ... & Adams, J. (2017). Osteopathic manipulative treatment: a systematic review and critical appraisal of comparative effectiveness and health economics research. *Musculoskeletal Science and Practice*, 27, 165-175.
<https://www.sciencedirect.com/science/article/pii/S1356689X16308165>

Stewart, A. L., Greenfield, S., Hays, R. D., Wells, K., Rogers, W. H., Berry, S. D., ... & Ware, J. E. (1989). Functional status and well-being of patients with chronic conditions: results from the Medical Outcomes Study. *Jama*, 262(7), 907-913. <https://jamanetwork.com/journals/jama/article-abstract/378363>

Stewart, M. (2001). Towards a global definition of patient centred care: the patient should be the judge of patient centred care. *British Medical Journal*, 322(7284), 444-445.
<https://www.bmj.com/content/322/7284/444.short>

Stilwell, P., & Harman, K. (2019). An enactive approach to pain: Beyond the biopsychosocial model. *Phenomenology and the Cognitive Sciences*, 18(4), 637-665.
https://link.springer.com/article/10.1007/s11097-019-09624-7?fbclid=IwAR2Lzy--YBpSCORqGa_bJBTg-ml79IQvJMhrCxlqAHk6ZpvsCx-HP2jmp_k

Strutt, R., Shaw, Q., & Leach, J. (2008). Patients' perceptions and satisfaction with treatment in a UK osteopathic training clinic. *Manual Therapy*, 13(5), 456-467.
<https://www.academia.edu/download/51018721/j.math.2007.05.01320161222-10552-1iofg9i.pdf>

Stuber, K. J., Wynd, S., & Weis, C. A. (2012). Adverse events from spinal manipulation in the pregnant and postpartum periods: a critical review of the literature. *Chiropractic & Manual Therapies*, 20, 1-7.
<https://link.springer.com/article/10.1186/2045-709X-20-8>

Sturesson, B., Uden, A., & Vleeming, A. (2000). A radiostereometric analysis of the movements of the sacroiliac joints in the reciprocal straddle position. *Spine*, 25(2), 214.
https://journals.lww.com/spinejournal/fulltext/2000/01150/A_Radiostereometric_Analysis_of_the_Movements_of.12.aspx

Sueki, D. G., Cleland, J. A., & Wainner, R. S. (2013). A regional interdependence model of musculoskeletal dysfunction: research, mechanisms, and clinical implications. *Journal of Manual &*

<https://www.tandfonline.com/doi/abs/10.1179/2042618612Y.0000000027>

Sullivan, M. J., Bishop, S. R., & Pivik, J. (1995). The pain catastrophizing scale: development and validation. *Psychological Assessment*, 7(4), 524. https://www.aspecthealth.ca/wp-content/uploads/2017/03/PCSTManual_English1.pdf

Sutherland, R., & Morley, S. (2008). Self-pain enmeshment: future possible selves, sociotropy, autonomy and adjustment to chronic pain. *Pain*, 137(2), 366-377. <https://doi.org/10.1016/j.pain.2007.09.023>

Swinkels-Meewisse, I. E. J., Roelofs, J., Oostendorp, R. A. B., Verbeek, A. L. M., & Vlaeyen, J. W. S. (2006). Acute low back pain: pain-related fear and pain catastrophizing influence physical performance and perceived disability. *Pain (Amsterdam)*, 120(1), 36-43. <https://doi.org/10.1016/j.pain.2005.10.005>

Swinkels-Meewisse, I. E., Roelofs, J., Schouten, E. G., Verbeek, A. L., Oostendorp, R. A., & Vlaeyen, J. W. (2006). Fear of movement/(re) injury predicting chronic disabling low back pain: a prospective inception cohort study. *Spine*, 31(6), 658-664. https://journals.lww.com/spinejournal/fulltext/2006/03150/fear_of_movement_re_injury_predicting_chronic.10.aspx

Talari, K., & Goyal, M. (2020). Retrospective Studies – Utility and Caveats. *The Journal of the Royal College of Physicians of Edinburgh*, 50(4), 398-402. <https://doi.org/10.4997/jrcpe.2020.409>

Talari, K., & Goyal, M. (2020). Retrospective studies—utility and caveats. *Journal of the Royal College of Physicians of Edinburgh*, 50(4), 398-402. <https://journals.sagepub.com/doi/abs/10.4997/jrcpe.2020.409>

Tang, N. K., Beckwith, P., & Ashworth, P. (2016). Mental defeat is associated with suicide intent in patients with chronic pain. *The Clinical Journal of Pain*, 32(5), 411-419. https://journals.lww.com/clinicalpain/fulltext/2016/05000/mental_defeat_is_associated_with_suicide_intent_in.6.aspx

Tang, N. K., Salkovskis, P. M., & Magdi, H. (2007). Mental defeat in chronic pain: initial exploration of the concept. *The Clinical Journal of Pain*, 23(3), 222-232. https://www.academia.edu/download/42220787/Mental_defeat_in_chronic_pain_Initial_ex20160206-1007-1kuk0aa.pdf

Tashakkori, A., & Creswell, J. W. (2007). The new era of mixed methods. *Journal of mixed methods research*, 1(1), 3-7. <https://journals.sagepub.com/doi/abs/10.1177/2345678906293042>

Testa, M., & Rossetini, G. (2016). Enhance placebo, avoid nocebo: How contextual factors affect physiotherapy outcomes. *Manual Therapy*, 24, 65-74. <https://www.sciencedirect.com/science/article/pii/S1356689X1630008X>

The Chartered Society of Physiotherapists. (2017). *The CSP impact report*. <https://www.csp.org.uk/publications/csp-impact-report-2017>

Thoele, K., Ferren, M., Moffat, L., Keen, A., & Newhouse, R. (2020). Development and use of a toolkit to facilitate implementation of an evidence-based intervention: a descriptive case study. *Implementation Science Communications*, 1, 1-12. <https://link.springer.com/content/pdf/10.1186/s43058-020-00081-x.pdf>

Thomas, E., Silman, A. J., Croft, P. R., Papageorgiou, A. C., Jayson, M. I. V., & Macfarlane, G. J. (1999). Predicting who develops chronic low back pain in primary care: a prospective study. *British Medical Journal*, 318(7199), 1662–1667. <https://doi.org/10.1136/bmj.318.7199.1662>

Thomson, O. P., & MacMillan, A. (2023). What's wrong with osteopathy? *International Journal of Osteopathic Medicine*, 48, 100659-. <https://doi.org/10.1016/j.ijosm.2023.100659>

Thomson, O. P., Petty, N. J., & Moore, A. P. (2013). Reconsidering the patient-centeredness of osteopathy. *International Journal of Osteopathic Medicine*, 16(1), 25–32. <https://www.sciencedirect.com/science/article/pii/S1746068912000223>

Thomson, O. P., Petty, N. J., & Moore, A. P. (2014). A qualitative grounded theory study of the conceptions of clinical practice in osteopathy – A continuum from technical rationality to professional artistry. *Manual Therapy*, 19(1), 37–43. <https://doi.org/10.1016/j.math.2013.06.005>

Thomson, O. P., Petty, N. J., & Moore, A. P. (2014). Clinical decision-making and therapeutic approaches in osteopathy—a qualitative grounded theory study. *Manual Therapy*, 19(1), 44-51. <https://www.sciencedirect.com/science/article/pii/S1356689X13001264>

Thornhill, J. T. (2020). A Vitalism Ethos and the Chiropractic Health Care Paradigm. *Journal of Chiropractic Humanities*, 27, 59–81. <https://www.sciencedirect.com/science/article/pii/S1556349920300048>

- Thornquist, E. (2022). Movement, touch and talk in Norwegian psychomotor physiotherapy. *Frontiers in Rehabilitation Sciences, 3*, 1011146. <https://www.frontiersin.org/articles/10.3389/fresc.2022.1011146/full>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care, 19*(6), 349-357. <https://doi.org/10.1093/intqhc/mzm042>
- Tota-Faucette, M. E., Gil, K. M., Williams, D. A., Keefe, F. J., & Goli, V. (1993). The role of family environment and changes in cognitive processes. *The Clinical Journal of Pain, 9*(2), 115-123. https://journals.lww.com/clinicalpain/abstract/1993/06000/The_Role_of_Family_Environment_and_Changes_in.6.aspx
- Treede, R. D., Rief, W., Barke, A., Aziz, Q., Bennett, M. I., Benoliel, R., ... & Wang, S. J. (2015). A classification of chronic pain for ICD-11. *Pain, 156*(6), 1003-1007. https://journals.lww.com/pain/fulltext/2015/06000/A_classification_of_chronic_pain_for_ICD_11.6.aspx
- Truong, B. T., Lupattelli, A., Kristensen, P., & Nordeng, H. (2017). Sick leave and medication use in pregnancy: a European web-based study. *BMJ Open, 7*(8), 014934. <https://doi.org/10.1136/bmjopen-2016-014934>
- Tschacher, W., Giersch, A., & Friston, K. (2017). Embodiment and schizophrenia: a review of implications and applications. *Schizophrenia Bulletin, 43*(4), 745–753. <https://doi.org/10.1093/schbul/sbw220>
- Turk, D.C., & Okifuji, A. (2001). Pain terms and taxonomies. In D. Loeser, S. H. Butler, J. J. Chapman, & D. C. Turk (Eds), *Bonica's Management of Pain* (3rd ed., pp. 18-25). Lippincott Williams & Wilkins.
- Twining, R. (2012). Visceral osteopathy: the peritoneal organs. *International Journal of Osteopathic Medicine, 15*(4), 173–174. <https://doi.org/10.1016/j.ijosm.2012.07.004>
- Tyreman, S. (2013). Re-evaluating 'osteopathic principles.' *International Journal of Osteopathic Medicine, 16*(1), 38–45. <https://doi.org/10.1016/j.ijosm.2012.08.005>
- Uemura, Y., Yasui, T., Horike, K., Maeda, K., Uemura, H., Haku, M., ... & Matsumura, K. (2018). Association of Low Back and Pelvic Pain with Mental Health Condition during Pregnancy and Postpartum. *Health, 10*(12), 1650-1660. <https://www.scirp.org/journal/paperinformation?paperid=88936>

UK BEAM Trial Team. (2004). United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: cost effectiveness of physical treatments for back pain in primary care. *British Medical Journal*, 329, 1381-1385.

Unsgaard-Tøndel, M., & Söderstrøm, S. (2021). Therapeutic alliance: patients' expectations before and experiences after physical therapy for low back pain—A qualitative study with 6-month follow-up. *Physical Therapy*, 101(11), 187. <https://academic.oup.com/ptj/article-abstract/101/11/pzab187/6330887>

Vakilian, K., Zarei, F., & Majidi, A. (2019). Effect of acceptance and commitment therapy (ACT) on anxiety and quality of life during pregnancy: A mental health clinical trial study. *Iranian Red Crescent Medical Journal*, 21(8).

van Dun, P. L. (2023). There is nothing wrong with osteopathy. *International Journal of Osteopathic Medicine*, 50. [https://www.journalofosteopathicmedicine.com/article/S1746-0689\(23\)00022-6/abstract](https://www.journalofosteopathicmedicine.com/article/S1746-0689(23)00022-6/abstract)

van Rysewyk, S., Blomkvist, R., Chuter, A., Crighton, R., Hodson, F., Roomes, D., Smith, B. H., & Toye, F. (2023). Understanding the lived experience of chronic pain: A systematic review and synthesis of qualitative evidence syntheses. *British Journal of Pain*, 17(6), 592–605. <https://doi.org/10.1177/20494637231196426>

Van Tulder, M. F. A., Bombardier C., Bouter L., & the Editorial Board of the Cochrane Collaboration back review group. (2003). Updated method guidelines for systematic reviews in the Cochrane Collaboration back review group. *Spine*, 28, 1290-1299.

Vandecasteele, R., Robijn, L., Stevens, P. A. J., Willems, S., & De Maesschalck, S. (2024). “Trying to write a story together”: general practitioners' perspectives on culturally sensitive care. *International Journal for Equity in Health*, 23(1), 1–15. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11154983/>

Vargas-Prada, S., & Coggon, D. (2015). Psychological and psychosocial determinants of musculoskeletal pain and associated disability. *Best Practice & Research. Clinical Rheumatology*, 29(3), 374–390. <https://www.sciencedirect.com/science/article/pii/S1521694215000066>

Vase, L., Skyt, I., Laue Petersen, G., & Price, D. D. (2014). Placebo and nocebo effects in chronic pain patients: How expectations and emotional feelings contribute to the experience of pain. *Zeitschrift für Psychologie*, 222(3), 135. <https://psycnet.apa.org/record/2014-33307-004>

Veehof, M. M., Oskam, M. J., Schreurs, K. M., & Bohlmeijer, E. T. (2011). Acceptance-based interventions for the treatment of chronic pain: a systematic review and meta-analysis. *Pain*, 152(3), 533-542. <https://www.sciencedirect.com/science/article/pii/S0304395910006871>

Vehmeijer, F. O. L., Guxens, M., Duijts, L., & El Marroun, H. (2019). Maternal psychological distress during pregnancy and childhood health outcomes: a narrative review. *Journal of Developmental Origins of Health and Disease*, 10(3), 274–285. <https://doi.org/10.1017/S2040174418000557>

Vermani, E., Mittal, R., & Weeks, A. (2010). Pelvic girdle pain and low back pain in pregnancy: a review. *Pain Practice*, 10(1), 60-71. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1533-2500.2009.00327.x>

Vignato, J., Beck, C. T., Conley, V., Inman, M., Patsais, M., & Segre, L. S. (2021). The lived experience of pain and depression symptoms during pregnancy. *MCN: The American Journal of Maternal/Child Nursing*, 46(4), 198-204. https://journals.lww.com/mcnjournal/fulltext/2021/07000/the_lived_experience_of_pain_and_depression.3.aspx

Vignato, J., Perkhounkova, Y., McCarthy, A. M., & Segre, L. S. (2020). Pain and depression symptoms during the third trimester of pregnancy. *MCN: The American Journal of Maternal/Child Nursing*, 45(6), 351-356. DOI: 10.1097/NMC.0000000000000657

Virgara, R., Maher, C., & Van Kessel, G. (2018). The comorbidity of low back pelvic pain and risk of depression and anxiety in pregnancy in primiparous women. *BMC Pregnancy and Childbirth*, 18(1), 288–288. <https://doi.org/10.1186/s12884-018-1929-4>

Vlaeyen, J. W., & Linton, S. J. (2000). Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art. *Pain*, 85(3), 317-332. <https://www.sciencedirect.com/science/article/pii/S0304395999002420>

Vlaeyen, J. W., & Linton, S. J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain*, 153(6), 1144-1147. https://journals.lww.com/pain/fulltext/2012/06000/fear_avoidance_model_of_chronic_musculoskeletal.8.aspx

Von Korff, M., Lin, E. H., Fenton, J. J., & Saunders, K. (2007). Frequency and priority of pain patients' health care use. *The Clinical Journal of Pain*, 23(5), 400-408.

https://journals.lww.com/clinicalpain/fulltext/2007/06000/frequency_and_priority_of_pain_patient_s_health.3.aspx

Vowles, K. E., & McCracken, L. M. (2008). Acceptance and values-based action in chronic pain: a study of treatment effectiveness and process. *Journal of Consulting and Clinical Psychology*, 76(3), 397. https://www.researchgate.net/profile/Lance-Mccracken/publication/5316175_Acceptance_and_Values-Based_Action_in_Chronic_Pain_A_Study_of_Treatment_Effectiveness_and_Process/links/0912f50b660086745e000000/Acceptance-and-Values-Based-Action-in-Chronic-Pain-A-Study-of-Treatment-Effectiveness-and-Process.pdf

Vowles, K. E., McNeil, D. W., Gross, R. T., McDaniel, M. L., Mouse, A., Bates, M., ... & McCall, C. (2007). Effects of pain acceptance and pain control strategies on physical impairment in individuals with chronic low back pain. *Behavior Therapy*, 38(4), 412-425. <https://www.sciencedirect.com/science/article/pii/S0005789407000548>

Vroman, K., Warner, R., & Chamberlain, K. (2009). Now let me tell you in my own words: narratives of acute and chronic low back pain. *Disability and Rehabilitation*, 31(12), 976-987. <https://www.tandfonline.com/doi/abs/10.1080/09638280802378017>

Waddell, G., Newton, M., Henderson, I., Somerville, D., & Main, C. J. (1993). A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. *Pain*, 52(2), 157-168. https://journals.lww.com/pain/abstract/1993/02000/A_Fear_Avoidance_Beliefs_Questionnaire_FA_BQ_and.5.aspx

Wade, BL and Shantall, H. M. (2003). The meaning of chronic pain: a phenomenological analysis. *South African Journal of Physiotherapy*, 59(1), 10. https://journals.co.za/doi/pdf/10.10520/AJA03796175_1122

Wagner, C. C., & Ingersoll, K. S. (2008). Beyond cognition: Broadening the emotional base of motivational interviewing. *Journal of Psychotherapy Integration*, 18(2), 191. <https://psycnet.apa.org/fulltext/2008-07214-004.html>

Wahbeh, H., Senders, A., Neuendorf, R., & Cayton, J. (2014). Complementary and alternative medicine for posttraumatic stress disorder symptoms: a systematic review. *Journal of Evidence-Based*

Complementary & Alternative Medicine, 19(3), 161-175.
<https://journals.sagepub.com/doi/abs/10.1177/2156587214525403>

Wai, E. K., Roffey, D. M., Bishop, P., Kwon, B. K., & Dagenais, S. (2010). Causal assessment of occupational bending or twisting and low back pain: results of a systematic review. *The Spine Journal*, 10(1), 76-88. <https://www.sciencedirect.com/science/article/pii/S1529943009002733>

Walker, J., Sofaer, B., & Holloway, I. (2006). The experience of chronic back pain: accounts of loss in those seeking help from pain clinics. *European Journal of Pain*, 10(3), 199-207. <https://www.sciencedirect.com/science/article/pii/S109038010500042X>

Wallston, K. A., Strudler Wallston, B., & DeVellis, R. (1978). Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6(1), 160-170. <https://journals.sagepub.com/doi/abs/10.1177/109019817800600107>

Walsh, K., Cruddas, M., & Coggon, D. (1992). Low back pain in eight areas of Britain. *Journal of Epidemiology & Community Health*, 46(3), 227-230. <https://jech.bmj.com/content/46/3/227.short>

Wand, B. M., Catley, M. J., Rabey, M. I., O'Sullivan, P. B., O'Connell, N. E., & Smith, A. J. (2016). Disrupted self-perception in people with chronic low back pain. Further evaluation of the Fremantle Back Awareness Questionnaire. *The Journal of Pain*, 17(9), 1001-1012. <https://www.sciencedirect.com/science/article/pii/S1526590016300852>

Wang, S. M., Dezinno, P., Maranets, I., Berman, M. R., Caldwell-Andrews, A. A., & Kain, Z. N. (2004). Low back pain during pregnancy: prevalence, risk factors, and outcomes. *Obstetrics & Gynecology*, 104(1), 65-70. https://journals.lww.com/greenjournal/fulltext/2004/07000/low_back_pain_during_pregnancy_prevalence_risk.11.aspx

Wang, S. M., Zinno, P. D., Fermo, L., William, K., Caldwell-Andrews, A. A., Bravemen, F., & Kain, Z. N. (2005). Complementary and alternative medicine for low-back pain in pregnancy: a cross-sectional survey. *Journal of Alternative & Complementary Medicine*, 11(3), 459-464. <https://www.liebertpub.com/doi/abs/10.1089/acm.2005.11.459>

Warin, J., Maddock, M., Pell, A., & Hargreaves, L. (2006). Resolving identity dissonance through reflective and reflexive practice in teaching. *Reflective Practice*, 7(2), 233-245. <https://www.tandfonline.com/doi/abs/10.1080/14623940600688670>

Wellings, K., Branigan, P., & Mitchell, K. (2000). Discomfort, discord and discontinuity as data: Using focus groups to research sensitive topics. *Culture, Health & Sexuality*, 2(3), 255–267. <https://doi.org/10.1080/136910500422241>

Werler, M. M., Mitchell, A. A., Hernandez-Diaz, S., & Honein, M. A. (2005). Use of over-the-counter medications during pregnancy. *American Journal of Obstetrics and Gynecology*, 193(3), 771-777. <https://www.sciencedirect.com/science/article/pii/S0002937805003467>

Wertli, M. M., Rasmussen-Barr, E., Held, U., Weiser, S., Bachmann, L. M., & Brunner, F. (2014). Fear-avoidance beliefs—a moderator of treatment efficacy in patients with low back pain: a systematic review. *The Spine Journal*, 14(11), 2658-2678. <https://www.sciencedirect.com/science/article/pii/S1529943014002344>

Westergren, A., Edin, K., Lindkvist, M., & Christianson, M. (2021). Exploring the medicalisation of childbirth through women’s preferences for and use of pain relief. *Women and Birth*, 34(2), e118-e127. <https://www.sciencedirect.com/science/article/pii/S1871519219310893>

Westmoreland, J. L., Williams, N. H., Wilkinson, C., Wood, F., & Westmoreland, A. (2007). Should your GP be an osteopath? Patients’ views of an osteopathy clinic based in primary care. *Complementary Therapies in Medicine*, 15(2), 121-127. <https://www.sciencedirect.com/science/article/pii/S0965229905001494>

Westra, H. A., & Aviram, A. (2013). Core skills in motivational interviewing. *Psychotherapy*, 50(3), 273–278. <https://doi.org/10.1037/a0032409>

Wetherell, J. L., Afari, N., Rutledge, T., Sorrell, J. T., Stoddard, J. A., Petkus, A. J., ... & Atkinson, J. H. (2011). A randomized, controlled trial of acceptance and commitment therapy and cognitive-behavioral therapy for chronic pain. *Pain*, 152(9), 2098-2107. <https://www.sciencedirect.com/science/article/pii/S0304395911003393>

White, R. E., & Cooper, K. (2022). *Qualitative research in the post-modern era*. Springer.

Whiting, L. M. (1911). Can the length of labor be shortened by osteopathic treatment. *Journal of the American Osteopathic Association*, 11, 917-921.

Wicksell, R. K., Olsson, G. L., & Melin, L. (2009). The Chronic Pain Acceptance Questionnaire (CPAQ)-further validation including a confirmatory factor analysis and a comparison with the Tampa Scale of

Kinesiophobia. *European Journal of Pain*, 13(7), 760-768.
<https://www.sciencedirect.com/science/article/pii/S1090380108002000>

Wideman, T. H., Edwards, R. R., Walton, D. M., Martel, M. O., Hudon, A., & Seminowicz, D. A. (2019). The multimodal assessment model of pain: a novel framework for further integrating the subjective pain experience within research and practice. *The Clinical Journal of Pain*, 35(3), 212-221.
https://journals.lww.com/clinicalpain/fulltext/2019/03000/The_Multimodal_Assessment_Model_of_Pain_A_Novel.2.aspx

Wilkinson, S., Joffe, H., & Yardley, L. (2004). Qualitative data collection: interviews and focus groups. In D. Marks & L. Yardley (Eds.), *Research Methods for Clinical and Health Psychology* (pp. 39-55). SAGE.

Williams, N. (1997). Managing back pain in general practice--is osteopathy the new paradigm?. *British Journal of General Practice*, 47(423), 653-655. <https://bjgp.org/content/47/423/653.short>

Williams, N. H. (2007). Optimising the psychological benefits of osteopathy. *International Journal of Osteopathic Medicine*, 10(2-3), 36-41.
<https://www.sciencedirect.com/science/article/pii/S1746068907000399>

Williams, N. H., Edwards, R. T., Linck, P., Muntz, R., Hibbs, R., Wilkinson, C., ... & Hounsborne, B. (2004). Cost-utility analysis of osteopathy in primary care: results from a pragmatic randomized controlled trial. *Family practice*, 21(6), 643-650. <https://academic.oup.com/fampra/article-abstract/21/6/643/508717>

Williams, N. H., Wilkinson, C., Russell, I., Edwards, R. T., Hibbs, R., Linck, P., & Muntz, R. (2003). Randomized osteopathic manipulation study (ROMANS): pragmatic trial for spinal pain in primary care. *Family Practice*, 20(6), 662-669. <https://academic.oup.com/fampra/article-abstract/20/6/662/530845>

Wilson, K. G., & Murrell, A. R. (2004). Values work in acceptance and commitment therapy: Setting a course for behavioural treatment. In S. C. Hayes, V. M. Follette & M. M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive behavioural tradition* (pp. 120-151). Guilford Press.

Woby, S. R., Watson, P. J., Roach, N. K., & Urmston, M. (2004). Adjustment to chronic low back pain—the relative influence of fear-avoidance beliefs, catastrophizing, and appraisals of control. *Behaviour Research and Therapy*, 42(7), 761-774.
<https://www.sciencedirect.com/science/article/pii/S0005796703001955>

Wojnar, D. M., & Swanson, K. M. (2007). Phenomenology: An Exploration. *Journal of Holistic Nursing*, 25(3), 172–180. <https://journals.sagepub.com/doi/abs/10.1177/0898010106295172>

Wołoszyn, K., & Hohol, M. (2017). Commentary: The poverty of embodied cognition. *Frontiers in Psychology*, 8, 845–845. <https://doi.org/10.3389/fpsyg.2017.00845>

Won, C. H. J. (2015). Sleeping for Two: The Great Paradox of Sleep in Pregnancy. *Journal of Clinical Sleep Medicine*, 11(6), 593–594. <https://doi.org/10.5664/jcsm.4760>

Woods, M. P., & Asmundson, G. J. (2008). Evaluating the efficacy of graded in vivo exposure for the treatment of fear in patients with chronic back pain: a randomized controlled clinical trial. *Pain*, 136(3), 271–280. <https://www.sciencedirect.com/science/article/pii/S0304395907003739>

Woolf, C. J., & Salter, M. W. (2000). Neuronal plasticity: increasing the gain in pain. *Science*, 288(5472), 1765–1768. <https://www.science.org/doi/abs/10.1126/science.288.5472.1765>

World Health Organisation. (2010, June 5). *Benchmarks for Training in Traditional/Complementary and Alternative Medicine: Benchmarks for Training in Osteopathy*. WHO. <https://www.who.int/publications/i/item/9789241599665>

World Health Organization. (1997). The Vienna recommendations on health promoting hospitals. *WHO Regional office for Europe. Copenhagen-Denmark*.

Wu, W. H., Meijer, O. G., Uegaki, K., Mens, J. M. A., Van Dieen, J. H., Wuisman, P. I. J. M., & Östgaard, H. C. (2004). Pregnancy-related pelvic girdle pain (PPP), I: Terminology, clinical presentation, and prevalence. *European Spine Journal*, 13, 575–589. <https://link.springer.com/article/10.1007/s00586-003-0615-y>

Wu, W., Meijer, O. G., Jutte, P. C., Uegaki, K., Lamothe, C. J., de Wolf, G. S., ... & Beek, P. J. (2002). Gait in patients with pregnancy-related pain in the pelvis: an emphasis on the coordination of transverse pelvic and thoracic rotations. *Clinical Biomechanics*, 17(9–10), 678–686. <https://www.sciencedirect.com/science/article/pii/S0268003302001092>

Yamada, J., Shorkey, A., Barwick, M., Widger, K., & Stevens, B. J. (2015). The effectiveness of toolkits as knowledge translation strategies for integrating evidence into clinical care: a systematic review. *BMJ open*, 5(4), e006808. <https://bmjopen.bmj.com/content/5/4/e006808.short>

Yang, K. H., & King, A. I. (1984). Mechanism of facet load transmission as a hypothesis for low-back pain. *Spine*, 9(6), 557–565.

https://journals.lww.com/spinejournal/abstract/1984/09000/Mechanism_of_Facet_Load_Transmission_as_a.5.aspx

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health*, 15(2), 215-228.

York Health Economics Consortium. (2016). *Pragmatic review (online)*. York Health Economics Consortium. <https://yhec.co.uk/glossary/pragmatic-review/>

Yu, D., Missen, M., Jordan, K. P., Edwards, J. J., Bailey, J., Wilkie, R., ... & Peat, G. (2022). Trends in the annual consultation incidence and prevalence of low back pain and osteoarthritis in England from 2000 to 2019: comparative estimates from two clinical practice databases. *Clinical epidemiology*, 179-189. <https://doi.org/10.2147/CLEP.S337323>

Yu, L., & McCracken, L. M. (2016). Model and Processes of Acceptance and Commitment Therapy (ACT) for Chronic Pain Including a Closer Look at the Self. *Current Pain and Headache Reports*, 20(2), 12–12. <https://doi.org/10.1007/s11916-016-0541-4>

Zaharias, G. (2018). What is narrative-based medicine? Narrative-based medicine 1. *Canadian Family Physician*, 64(3), 176-180. <https://www.cfp.ca/content/64/3/176.short>

Zamariola, G., Frost, N., Van Oost, A., Corneille, O., & Luminet, O. (2019). Relationship between interoception and emotion regulation: New evidence from mixed methods. *Journal of Affective Disorders*, 246, 480-485. <https://www.sciencedirect.com/science/article/pii/S0165032718323723>

Zegarra-Parodi, R., Esteves, J. E., Lunghi, C., Baroni, F., Draper-Rodi, J., & Cerritelli, F. (2021). The legacy and implications of the body-mind-spirit osteopathic tenet: a discussion paper evaluating its clinical relevance in contemporary osteopathic care. *International Journal of Osteopathic Medicine*, 41, 57-65. <https://www.sciencedirect.com/science/article/pii/S1746068921000286>

Zusman, M. (1986). Spinal manipulative therapy: review of some proposed mechanisms, and a new hypothesis. *Australian Journal of Physiotherapy*, 32(2), 89-99. <https://www.sciencedirect.com/science/article/pii/S0004951414606450>

Zusman, M. (2002). Forebrain-mediated sensitization of central pain pathways: ‘non-specific’ pain and a new image for MT. *Manual Therapy*, 7(2), 80–88. <https://doi.org/10.1054/math.2002.0442>

Appendices

Appendix 1 – Invitation to Participate in Study 1

Invitation to Participate in Research.

Are you a new mum to be experiencing low back pain and receiving osteopathic treatment?

If you are currently expecting your first baby and have received osteopathic treatment for low back pain we would like to interview you!

Here at the Health and Wellbeing Academy we are currently recruiting for a research study which will involve us asking you about your experience of low back pain during your pregnancy and how osteopathy may have impacted your pregnancy related low back pain

Here at the Health and Wellbeing Academy of Swansea University we are interested in understanding better the experience of first-time mothers who have been experiencing lower back pain as part of their pregnancy and how osteopathy may have affected this. We would like to interview you and discuss how this may have affected you so far.

This study will involve approximately an hour and a half of your time and give you the chance to discuss how low back pain during your pregnancy has affected your life and what, if any effect osteopathy has had on this. Interviews will on a one to one basis with Registered Osteopath and Senior Lecturer, Mr Ross Johnston.

- There is no obligation to take part in this study, it is entirely voluntary and you are able to withdraw from the process at any time without any form of penalty.
- Ethical Consent for this study will be gained via the College of Human and Health Science before this study commences. This ensures all information and data collected will be anonymised and completely confidential.
- If you decided to take part you will be provided with pre-study and post-study information sheets, as well as a medical and consent form to fill out. You shall be given time to read the

information sheets as well as fill in the medical and consent forms before partaking in the study.

If you are interested in taking part in this study please contact Ross Johnston on [REDACTED] or [REDACTED]. Alternatively, in the first instance you can speak to the reception staff at the Health and Wellbeing Academy of Swansea University.

Eligibility checklist

For this study you are suitable to participate provided that you:

- Are expecting your first child
- Have had episodes of low back pain for 3 months or constant low back pain for 3 months
- Have been seeing an osteopath for the treatment of low back pain
- Are over 18 years of age
- Are not currently taking any medication for anxiety or depression
- Have not been hospitalised for a major depressive illness previously
- Have not previously had surgery on your spine

Thank you for taking the time to read this invitation. If you are not eligible for this study we are sorry that you cannot take part this time. Experiential research such as this uses exclusion criteria in order to explore the research topic from one particular perspective at a time. This does not mean that you will not be suitable for participation next time or in different studies. If you would like to discuss this in more detail please feel free to contact Ross Johnston as detailed below.

Please remember, even after inquiring about the study there is no obligation to take part and you are able to withdraw from the process at any point without any penalty acquired.

For further information regarding this study please feel free to contact:

[REDACTED]

Ross Johnston MSc BSc(Hons)OstMed ND DO FHEA. Senior Lecturer, Department of Interprofessional Studies, College of Human and Health Science. Swansea University

Appendix 2 - Participant Information Sheet for Study 1

Invitation

You have been asked to participate in a research study which looks at how the experience of low back pain affects women during their pregnancy. Before you make the decision whether you would like to participate, it is important to understand why this research is being conducted and what it involves. Please take time to read the following information regarding the study. This study is being performed by Mr Ross Johnston, a PhD student and Senior Lecturer within the Health and Wellbeing Academy of Swansea University. The results of this study will be anonymised and kept strictly confidential in accordance with the Data Protection Act of 1998.

Purpose of the Study

The purpose of this study is to find out how the experience of low back pain affects pregnant women who are expecting their first child. The study will focus on how lower back pain is affecting your experience of the pregnancy and the impact lower back pain has on your daily life during pregnancy.

What will Happen?

Once you have expressed interest in taking part in the study you will be provided with an information sheet which explains the study and consent form, either at the reception area of the Health and Wellbeing Academy or via email. The receptionist will then contact the researcher, Mr Ross Johnston and a mutually convenient time for you to attend the focus group will be arranged via email or phone should you be suitable to take part. If you choose to participate, you will be asked to attend a focus-group with 7 other participants. The focus-groups will take place at Swansea University, College of Human, and Health Sciences, in Singleton Park.

The focus group interview will last for approximately one and a half hours with a short break for refreshments. If at any point during the focus-group you wish to stop, you will be given the opportunity to withdraw from the focus-group. The focus-group will be a group conversation prompted by questions from the moderator relating to lower back pain and pregnancy. The focus-groups will be audio taped, and all data will remain confidential during the transcribing process. Once the results have been transcribed and anonymised the audio files will be deleted.

What will I have to do?

All that will be asked of you, is that you attend one focus-group at the agreed location; the researcher will arrange a convenient date and time. At this point you will be asked to sign a consent form and given the opportunity to ask any questions in relation to the focus groups. You will then, in

the focus-group, be asked a series of open questions in relation to low back pain during your pregnancy.

Commitment

This study is completely voluntary and it is your decision whether you wish to take part or not. If you do decide to participate you will be further provided with a short health questionnaire to fill out as well as a consent form to sign agreeing that you understand the procedure of the study. You can withdraw your involvement from the study at any point with no implications or questions asked.

Confidentiality

Ethical approval will be gained via the College of Human and Health Sciences All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please feel free to contact Ross Johnston

████████████████████ or Dr Sherrill ████████████████████

Further Information

For any additional information regarding this study, you are able to contact Ross Johnston
████████████████████ at any point before or after the study is complete.

For future reference, please keep these forms until after the study is complete. Thank you for considering to participate.

Appendix 3 - Consent Form Study 1

CONSENT FORM

Please sign in box

I confirm that I have read and understood the information sheet provided and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

YES/NO

I confirm that I am willing to have my interview recorded and transcribed anonymously.

YES/NO

I understand that I am able to withdraw from the study at any point with no medical or legal implications as a result of this.

YES/NO

I have completed the medical questionnaire and included any relevant information asked from me.

YES/NO

I understand that if I do feel uncomfortable during the study

I can immediately inform the researcher (Ross Johnston)

and I can immediately withdraw from the study

YES/NO

I understand that all data collected shall be anonymised and

used to provide information for a PhD project, which may

YES/NO

need to be accessed by responsible individuals during the study.

I agree to participate in this study.

YES/NO

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please feel free to contact either myself Ross Johnston () or Dr. Sherrill Snelgrove

Thank You

On behalf of the Health and Wellbeing Academy thank you for taking part. Your participation is greatly appreciated.

For the purposes of the study we ask you not to disclose or discuss information or research procedures with friends and family that may participate within the study, as this may affect the overall results of the study.

Post study information sheet

Thank you very much for taking part in this important study. Your contribution will be helpful in allowing us to understand the experience of low back pain during pregnancy

Purpose of the Study:

This study set out to explore the impact that the experience of low back pain during pregnancy has on the day to day lives of expectant mothers and how this may affect their ability to live their lives in the way which is most preferable to them. Additionally this study explored how the experience of low back pain during pregnancy affects the expectations of pregnancy in new mothers to be.

Following the Study

Low back pain during pregnancy is generally accepted to be very normal. Feelings of low mood or anxiety related to low back pain during pregnancy are likely to be short lived in the majority of cases however if you feel that your low back pain and or mood is getting worse it is important that you make an appointment with your GP to discuss this.

In the very large majority of cases low back pain is not related to damage to your body and will recover. This can be confusing for sufferers as low back pain can be very debilitating. However there is no harm in getting a check-up especially if your back pain is constant or associated with any pain in the lower limbs. In the event that you are concerned about future incidences of low back or any other symptoms please make an appointment with your GP to discuss this.

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please contact Ross Johnston

or Dr Sherrill Snelgrove

For the purposes of the study we ask you not to disclose or discuss information or research procedures with friends and family that may participate within the study, as this may affect the overall results of the study.

Appendix 5 – Ethical Approval for Study 1

Angela Smith
JOHNSTON R. (■■■■■);
Gary Christopher

Jaynie Rance
Dear Ross,

You probably have received my Out of Office now as I retired from the University as an employee on 31st July 2025 (although I will be remaining on an honorary contract). I am still awaiting access to the S drive from the Service Centre where all of the Ethics application information was stored prior to transfer to an automated system more recently.

Consequently, I think that it would be better if Gary took over on this from now on and asked for access to the s drive ((and the Ethics committee meetings/documents for 2018) to carry this forward as I will only be checking my e-mails intermittently.

I am aware however that you require something now. Whilst the approval letter is not immediately available I can recall the application and am aware that it was approved by the Committee (by myself as Chair at the time). Hopefully this will suffice.

Best wishes,

Angela
Honorary Senior lecturer wef 1st August 2025, previously Chair of Faculty of Medicine Health and Life Sciences Research Ethics Integrity and Governance Committee (and previously Chair of the Research Ethics Committee, School of Health and Social Care).

JOHNSTON R. (■■■■■)
Gary Christopher;
Angela Smith

Jaynie Rance
Dear Gary and Angela,

I am a currently completing my PhD required amendments (final submission 4th of August 2025). And I am missing a document. I wonder if you could help me.

Prior to PhD submission I was not able to find the ethical approval (from Angela) letter for Study 1 of my PhD (The lived experience of pregnancy related lumbo-pelvic pain: therapeutic contributions of osteopathic care) as it was emailed to my staff rather than student email. I have not been a staff member since 2022 and as such do not have access to my old email account. Ethical approval was granted on 20/07/18.

Please could you advise me if this is retrievable or in the case that it is not if a small statement/email from Ethics can function in lieu of the appendix in the appendices section?

Kindest regards,

Ross

Appendix 6 - Gatekeeper Form Study 1

Johnston R.G.

From: Charles Millward - Osteopath and Naturopath <[REDACTED]>
Sent: 10 July 2017 11:46
To: Johnston R.G.
Subject: Phd Project 2017

Dear Ross,

In regard to your project with the intention of gathering data from pregnant women with Low Back Pain.

For those women who are patients of Osteopaths belonging to the South Wales Osteopathic Society, I am happy to act as "gatekeeper".

Please do not hesitate to contact me further.

Charles Millward ND D.O.
Registered Osteopath

Appendix 7 - Invitation to participate in Study 2

Invitation to participate in online focus group research with professional colleagues.

Are you a UK registered osteopath with experience of treating pregnancy-related low back pain and/or pelvic girdle pain?

If you have been practising for at least 2 years and have experience of treating pregnancy-related low back pain and /or pelvic girdle pain we would like to invite you to take part in a Focus Group interview.

We are currently recruiting for a research study which will involve us asking you about your experience of how you clinically manage pregnancy-related low back and or pelvic girdle pain. You do not need to have specialist training or a specialist focus on pregnancy related problems to be eligible for this study.

This study will involve approximately an hour and a half of your time and give you the chance to discuss your management of this important clinical problem with colleagues. Interviews will be conducted via **Zoom** in a focus group format with up to 8 registered osteopaths. The semi-structured group interview will be facilitated by Registered Osteopath and Senior Lecturer, Mr Ross Johnston.

- There is no obligation to take part in this study, it is entirely voluntary and you are able to withdraw from the process at any time without any form of penalty.
- Ethical Consent for this study has been granted by Swansea University, College of Human and Health Science Research Ethics committee. All information and data collected will be anonymised and completely confidential.
- If you decided to take part you will be provided with pre-study and post-study information sheets, as well as a consent form to fill out. You shall be given time to read the information sheets as well as fill in and consent forms before partaking in the study.
- You will receive a CPD certificate from Swansea University which recognises “learning with others” as well as a £20 Amazon voucher.

If you are interested in taking part in this study please contact Ross Johnston on [REDACTED]
[REDACTED]

Eligibility checklist

For this study you are suitable to participate provided that you:

- Are a UK registered osteopath of at least 2 years experience
- Have had experience of treating pregnancy-related low back/and or pelvic girdle pain
- **PLEASE NOTE:** You **DO NOT** have to have specialist experience or training in the management of pregnancy related conditions to be eligible to participate in this study.

Pre-Study Information Sheet

Invitation

You have been asked to participate in a research study which looks at how you manage pregnancy-related lumbopelvic pain (PR-LP). Before you make the decision whether you would like to participate, it is important to understand why this research is being conducted and what it involves. Please take time to read the following information regarding the study. This study is being led by Mr Ross Johnston, a PhD student and Senior Lecturer within the College of Human and Health Science at Swansea University. The results of this study will be anonymised and kept strictly confidential in accordance with the Data protection Act of 1998.

Purpose of the Study

Purpose of the study

This study follows on from the first study of a PhD project which explored the lived experience of pregnant women who were suffering from PR-LP. This previous study explored how the women made sense of and ascribed meaning to their pain experience. In addition to this, the first study explored how the women experienced osteopathic treatment and how aspects of this allowed them to regain control over their pain related disability and accompanying psychological distress.

The purpose of this (second) study is to explore in detail how osteopaths establish therapeutic relationships with women suffering from PR-LP and what aspects of this facilitate improvements in the pain experience of this condition.

What will Happen?

Once you have expressed interest in the taking part in the study you will be provided with an information sheet which explains the study and consent form via email from Mr Ross Johnston, and a mutually convenient time for you to attend the focus group will be arranged via email and or doodle poll should you be suitable to take part. If you choose to participate, you will be asked to attend an online focus group interview on Zoom which will comprise general questions to facilitate discussion about you and your colleagues manage PR-LP in an osteopathic setting.

The focus group interview will last for approximately one and a half hours with a short break in the middle for comfort. If at any point during the interview you wish to stop, you will be given the

opportunity to withdraw from the study. The interview will be recorded on Zoom and a dictaphone, and all data will remain confidential during the transcribing process. Once the results have been anonymously transcribed, within a short while after the recording, the audio files will be deleted.

What will I have to do?

All that will be asked of you, is that you attend one interview at a time convenient for you. As the focus group interview will be attended by up to 8 registered osteopaths; the researcher will arrange a convenient date and time via doodle poll. At this point you will be asked to sign a consent form and given the opportunity to ask any questions in relation to the interview or the study. You will then, be asked a series of open questions in relation to how you manage PR-LP within your practice. The nature of these questions will explore particularly, aspects of the therapeutic alliance and how your clinical reasoning guides management.

Commitment

This study is completely voluntary and it is your decision whether you wish to take part or not. If you do decide to participate you will be asked to sign a consent form agreeing that you understand the procedure of the study. You can withdraw your involvement from the study at any point with no implications or questions asked.

Confidentiality

Ethical approval will be gained via the College of Human and Health Sciences All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please feel free to contact Ross Johnston

([REDACTED]) or Professor Jaynie Rance
([REDACTED])

Further Information

For any additional information regarding this study, you are able to contact Ross Johnston
([REDACTED]) at any point before or after the study is complete.

For future reference, please keep these forms until after the study is complete. Thank you for considering to participate.

Appendix - 9 Consent Form Study 2

CONSENT FORM

Participant Name:.....Date.....D/O/B.....

Years in osteopathic practice.....

Highest academic qualification. E.g Diploma/BSc/MSc/PhD.....

Please circle as appropriate and sign in box next to your answers.

I have previous experience of managing pregnancy-related lumbopelvic pain in an osteopathic setting.

YES/NO

☐

I have previous or current status as a teacher in an osteopathic educational institution.

YES/NO

☐

I have previous experience of post-graduate training in the management of pregnancy-related health problems or pain.

YES/NO

☐

I confirm that I have read and understood the information sheet provided and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

YES/NO ☐

I confirm that I am willing to have my interview recorded and transcribed anonymously.

YES/NO ☐

I understand that I am able to withdraw from the study at any point with no medical or legal implications as a result of this.

YES/NO ☐

I understand that if I do feel uncomfortable during the study I can immediately inform the researcher (Ross Johnston) and I can immediately withdraw from the study

YES/NO ☐

I understand that all data collected shall be anonymised and used to provide information for a PhD project, which may need to be accessed by responsible individuals during the study.

YES/NO ☐

I agree to participate in this study.

YES/NO ☐

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please feel free to contact either myself Ross Johnston ([REDACTED]) or Professor Jaynie Rance ([REDACTED])

Thank You

On behalf of the College of Human and Health Science, Swansea University, thank you for taking part. Your participation is greatly appreciated.

For the purposes of the study we ask you not to disclose or discuss information or research procedures with colleagues that may participate within the study, as this may affect the overall results of the study.

Post study information sheet

Thank you very much for taking part in this important study. Your contribution will be helpful in allowing us to understand how osteopathic practitioners establish therapeutic alliance within the management of pregnancy-related lumbopelvic pain (PRLP).

Purpose of the Study:

This study set out to explore how osteopaths manage and establish the therapeutic alliance in the management of PR-LP. This includes how their clinical reasoning and specific therapeutic intent guide management within the context of the relationship between patient and practitioner.

Following the Study

The findings of this study are included in a PhD project at the College of Human and Health Science, Swansea University. Please note that the interview data will be transcribed anonymously and the recording of this data will be destroyed once transcription has taken place.

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please contact Ross Johnston

or Professor Jaynie Rance

For the purposes of the study we ask you not to disclose or discuss information or research procedures with colleagues that may participate within the study, as this may affect the overall results of the study.

Appendix 11 - Peer Review of Semi Structured Interview Questions Study 2

Johnston R.G.

PHDstudy2ethicsinprog15 (Buss S.M.).docx

113 KB

Dear Ross,

Thank you for your email and attached document.

After reviewing the application for standard ethical approval see my comments:

- succinct and clear justifications outlined
- overview of the impact the design will have on the participants/focus groups
- detail on data collection method, transcription, coded and thematic analysis
- use of Zoom
- Consent
- inclusion and exclusion criteria listed
- selection and recruitment detailed
- point 7 - detailed overview of the design and conducting a focus group and development of the question sets devised for the focus group.
- appendix 4 - questions are equally probing (specific) and dialogic (general) in nature to engage the participants to discuss experience and expertise.
-

The questions consider the relevance of PR-LP encountered in Osteopathic clinical practice.

I hope you find my comments relevant and of an appropriate level for a review.

Let me know if you need anything further.

Kind regards

Stephen Buss M^{OST} DO FHEA

Lecturer in Osteopathy | *Darlithydd Osteopatheg*

College of Human & Health Sciences | *Coleg y Gwyddorau Dynol ac Iechyd*

Appendix 12 - Ethical Approval Study 2

From: Smith A.M. <[REDACTED]> on behalf of CHHS Ethics <[REDACTED]>
Sent: 22 April 2021 15:47
To: Johnston R.G. <[REDACTED]>; Rance J.Y. <[REDACTED]>; Hunter R. <[REDACTED]>
Cc: CHHS Ethics <[REDACTED]>
Subject: RE: Ethics application reference 110321

Dear Ross,

Ethics application reference 110321

Many thanks for the additional documentation. I am now able to provide a favourable ethical opinion in respect of your study. I wish you well with your ongoing research.

Best wishes,

Angela Smith

Senior Lecturer in Health Care Law and Ethics | Uwch Ddarlithydd mewn Cyfraith Gofal Iechyd a Moeseg

Chair, CHHS Ethics Committee

<https://www.swansea.ac.uk/humanandhealthsciences/research-at-the-college-of-human-and-health/research-ethics-committee/>

Appendix 13 - Gatekeeper Consent Study 2

Dear Ross,
I am happy to assist in this manner for your research.
When I receive the information, I will pass this onto Osteopaths in
South Wales (SWOS members) that have subscribed to be contacted from
SWOS by email.
All best
Charles
Dear Charles,

Further to our recent discussion, Please can I ask you to be the
Gatekeeper for participants that I will attempt to recruit from SWOS?
I will be scheduling 3 Zoom focus groups (approx 8 participants) from
next month up until summer.

I will make doodlepool details available to schedule and provide you
with the invitation to participate in research after the ethical
application is reviewed.

Ross Johnston MSc BSc(Hons)OstMed ND DO PGCTHE FHEA
Senior Lecturer |Uwch Ddarlithydd
College of Human and Health Sciences |Coleg y Gwyddorau Dynol ac
Iechyd
Swansea University | Prifysgol Abertawe
Singleton Park | Parc Singleton
SA2 8PP

Tel: [REDACTED]

Email: [REDACTED]

Appendix 14 - Invitation to Participate in Study 3

Invitation to Participate in Research.

Development of a Clinical Toolkit for Osteopathic
Management of Pregnancy-Related Lumbopelvic pain

If you are a UK registered osteopath with experience of managing pregnancy-related lumbopelvic pain (PR-LP) I would like to interview you!

My Name is Ross Johnston and I am a Registered Osteopath, and PhD student here at Swansea University. I am currently recruiting for a research study which will involve asking you and colleagues about the development of a clinical toolkit for the osteopathic management of PR-LP. I would like to interview you using the online programme Zoom.

You will receive a £20 Amazon voucher for your time.

I am interested in presenting recently collected data from the first 2 studies of my PhD which explores the lived experience of PR-LP and impact of osteopathy on this condition. Your views on this will be collated to develop a clinical toolkit for osteopathic approaches in PR-LP.

If you are interested in taking part in this study please contact [REDACTED] or [REDACTED].
Alternatively you can call [REDACTED] for all enquiries

Appendix 15- Recruitment advert for Study 3

PARTICIPANT INFORMATION SHEET FOR FOCUS GROUP INTERVIEW

The Development of a Clinical Toolkit for the Osteopathic Management of Pregnancy Related Lumbopelvic Pain

You are being invited to take part in some research. Before you decide whether or not to participate, it is important for you to understand why the research is being conducted and what it will involve. Please read the following information carefully.

What is the purpose of the research?

We are conducting research on the development of a clinical toolkit in the osteopathic management of pregnancy related lumbopelvic pain (PR-LP). A draft toolkit has been developed from the data of two previous studies in this PhD project. The data from these studies explored the lived experience of PR-LP from the patient's perspective as well as how osteopathic care impacted their experience of the condition. Further data in this project explored how osteopaths established the therapeutic alliance in their management of PR-LP.

Who is carrying out the research?

Data in the form of responses to semi-structured interview questions is being collected by Ross Johnston, registered osteopath and PhD student in the Department of Health and Social Care, Swansea University. This PhD study is being supervised by Professor Jaynie Rance and Dr Rachel Hunter in the department of Health and Social Care, Swansea University. The research has been approved by the College of Human and Health Sciences Research Ethics Committee.

What happens if I agree to take part?

You will be asked to participate in a group online interview via Zoom or similar software programme. During your interview the lead researcher will ask you a series of questions based on previously provided data in the form an information sheet and a short presentation (at the start of the interview). Interviews will last approximately 1 hour.

Are there any risks associated with taking part?

The research has been approved by the College of Human and Health Sciences Research Ethics Committee. There are no significant risks associated with participation.

Data Protection and Confidentiality

Your data will be processed in accordance with the Data Protection Act 2018 and the General Data Protection Regulation 2016 (GDPR). All information collected about you will be kept strictly confidential. Your data will only be viewed by the researcher/research team.

All electronic data will be stored on a password-protected computer file in the College of Human and Health Science, Vivian Tower, Swansea University, Singleton Parc campus. All paper records will be stored in a locked filing cabinet of the Primary Researcher in Swansea University. Your consent information will be kept separately from your responses to minimise risk in the event of a data breach.

Please note that the data we will collect for our study will be made anonymous, Anonymisation will occur immediately as the data is recorded and transcribed. At no point will your real name be used alongside your data, instead your data will be allocated a name different from your own thus it will not be possible to identify and remove your data at a later date, should you decide to withdraw from the study. If you wish to withdraw from the study you can do so up until the end of the interview.

The lead researcher will take responsibility for data destruction and all collected identifiable data will be destroyed on or before 1st of October 2025. As the data is collected for analysis in a PhD study the anonymised data will be kept until the PhD is completed and subsequent scientific articles are published (by the above date). However your real name or contact details will not be allocated to this data at any point.

What will happen to the information I provide?

An analysis of the information will form part of our report at the end of the study and may be presented to interested parties and published in scientific journals and related media. *Note that all information presented in any reports or publications will be anonymous and unidentifiable.*

Is participation voluntary and what if I wish to later withdraw?

Your participation is entirely voluntary – you do not have to participate if you do not want to. If you decide to participate, but later wish to withdraw from the study, then you are free to withdraw up until the interview is over, without giving a reason and without penalty.

Data Protection Privacy Notice

The data controller for this project will be Swansea University. The University Data Protection Officer provides oversight of university activities involving the processing of personal data, and can be contacted at the Vice Chancellors Office.

Your personal data will be processed for the purposes outlined in this information sheet.

Standard ethical procedures will involve you providing your consent to participate in this study by completing the consent form that has been provided to you.

The legal basis that we will rely on to process your personal data will be processing is necessary for the performance of a task carried out in the public interest. This public interest justification is approved by the College of Human and Health Sciences Research Ethics Committee, Swansea University.

The legal basis that we will rely on to process special categories of data will be processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes.

How long will your information be held?

We will hold any personal data and special categories of data for the duration for the PhD study and subsequent analysis of data for scientific publication. This period will extend until October 2025, after which time it will be destroyed. This personal data will comprise only your contact information which will not be allocated to the study data.

What are your rights?

You have a right to access your personal information, to object to the processing of your personal information, to rectify, to erase, to restrict and to port your personal information. Please visit the University Data Protection webpages for further information in relation to your rights.

Any requests or objections should be made in writing to the University Data Protection Officer:-

University Compliance Officer (FOI/DP)

Vice-Chancellor's Office

Swansea University

Singleton Park

Swansea

SA2 8PP

Email: dataprotection@swansea.ac.uk

How to make a complaint

If you are unhappy with the way in which your personal data has been processed you may in the first instance contact the University Data Protection Officer using the contact details above.

If you remain dissatisfied then you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at:-

Information Commissioner's Office,
Wycliffe House,
Water Lane,
Wilmslow,
Cheshire,
SK9 5AF
www.ico.org.uk

What if I have other questions?

If you have further questions about this study, please do not hesitate to contact us:

Appendix 16 - Consent Form Study 3

Consent Form

Participant Name.....Date.....D/O/B.....

Years in osteopathic practice.....

Highest academic qualification. E.g Diploma/BSc/MSc/PhD.....

Please circle as appropriate and sign in box next to your answers.

I have previous experience of managing pregnancy-related lumbopelvic pain in an osteopathic setting.

YES/NO

☐

I have previous or current status as a teacher in an osteopathic educational institution.

YES/NO

☐

I have previous experience of post-graduate training in the management of pregnancy-related health problems or pain.

YES/NO

☐

I confirm that I have read and understood the information sheet provided and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

YES/NO

☐

I confirm that I am willing to have my interview recorded and transcribed anonymously.

YES/NO

☐

I understand that I am able to withdraw from the study at any point with no medical or legal implications as a result of this.

YES/NO

☐

I understand that if during the study, I do not feel that I wish to continue, I can immediately inform the researcher (Ross Johnston) and withdraw from the study.

YES/NO

☐

I understand that all data collected will be anonymised and used to provide information for a PhD project, which may need to be accessed by responsible individuals during the study.

YES/NO

☐

I agree to participate in this study.

YES/NO

☐

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. Information in this study is transcribed from a recorded Zoom interview and a Dictaphone audio recording (as a backup) This information is then transcribed anonymously, and all recordings are then permanently deleted. If you decide you would like your data removed from the study you can request this up to 1 week after the interview, please feel free to contact either Ross Johnston ([REDACTED]), Professor Jaynie Rance ([REDACTED]) or Dr Rachel Hunter ([REDACTED]).

Thank You

On behalf of the School of Health and Social Care, Swansea University, thank you for taking part. Your participation is greatly appreciated.

For the purposes of the study, we ask you not to disclose or discuss information or research procedures with colleagues that may participate within the study, as this may affect the overall results of the study.

Post study information sheet

Thank you very much for taking part in this important study. Your contribution will be helpful in allowing us to develop guidance to enhance the osteopathic management of pregnancy-related lumbopelvic pain (PR-LP).

Purpose of the Study:

This study set out to explore the feasibility of the development of a clinical toolkit which serves as guidance in clinical management of PR-LP. This is focused on beneficial aspects of care which characterise the therapeutic alliance in osteopathic care of this condition. Participants were organised into 1 focus group and were invited to answer semi-structured interview questions based on a summary of findings of Study 1 and Study 2 of this PhD project. These studies explored the lived experience of PR-LP, the impact of osteopathic care on the condition and how osteopaths manage and establish the therapeutic alliance in PR-LP.

Following the Study

The findings of this study are included in a PhD project at the School of Health and Social Care, Swansea university. Please note that the interview data will be transcribed anonymously and the recording of this data will be destroyed once transcription has taken place.

Confidentiality

All information and data collected in the study will be anonymised and entirely confidential. Names will be changed into participant numbers and data will be stored on password protected devices. If you decide you would like your data removed from the study, please contact Ross Johnston ([REDACTED]), Professor Jaynie Rance [REDACTED] or [Dr Rachel Hunter](#) ([REDACTED])

For the purposes of the study we ask you not to disclose or discuss information or research procedures with colleagues that may participate within the study, as this may affect the overall results of the study.

Appendix 18 - Ethical Approval Study 3

Swansea University
Prifysgol Abertawe

Approval Date: 24/10/2023

Research Ethics Approval Number: 2 2023 7756 6931

Thank you for completing a research ethics application for ethical approval and submitting the required documentation via the online platform.

Project Title	PhD Project, Study 3. Feasibility Study: The Development of a Clinical Toolkit for Osteopaths Managing Pregnancy Related Lumbopelvic Pain.
Applicant name	MR ROSS JOHNSTON
Submitted by	MR ROSS JOHNSTON /
Full application form link	https://swansea.forms.ethicalreviewmanager.com/Project/Index/9659

The Health and Social Care ethics committee has approved the ethics application, subject to the conditions outlined below:

Approval conditions

1. The approval is based on the information given within the application and the work will be conducted in line with this. It is the responsibility of the applicant to ensure all relevant external and internal regulations, policies, and legislations are met.
2. This project may be subject to periodic review by the committee. The approval may be suspended or revoked at any time if there has been a breach of conditions.
3. Any substantial amendments to the approved proposal will be submitted to the ethics committee prior to implementing any such changes.

Specific conditions in respect of this application:

The application has been classified as Low Risk to the University.

No additional conditions.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees. It complies with [the guidelines of UKRI](#) and the concordat to support [Research Integrity](#).

Health and Social Care Research and Ethics Chair

Swansea University.

If you have any queries regarding this notification, then please contact your research ethics administrator for the faculty.

- For Science and Engineering contact FSE-Ethics@swansea.ac.uk
- For Medicine, Health and Life Science contact FMHLS-Ethics@swansea.ac.uk
- For Humanities and Social Sciences contact FHSS-Ethics@swansea.ac.uk

Appendix 19 - Gatekeeper Consent Study 3

Title of Project: PhD project: The lived experience of low back pain during pregnancy and osteopathic treatment: An interpretive phenomenological analysis.

Study 3: Feasibility Study: Implementation of Findings To the Osteopathic Profession: The Development of a Clinical Toolkit for Osteopaths Managing Pregnancy Related Lumbopelvic Pain (PhD project: The lived experience of Pregnancy Related Lumbopelvic Pain)

Ross Johnston. PhD Student, School of Health and Social Care

1. What is the reason for this letter?

This letter is to request access for you to distribute the invitation to participate in research for the above study to your team or members of your organisation.

2. What is the purpose of the study/rationale for the project?

This study is the final phase of a PhD project which explores the lived experience of pregnancy related lumbopelvic pain. The study presents a clinical toolkit of guidance in how to manage this condition. This clinical toolkit is derived from data collected in Study 1 and Study 2 of the PhD project. These previous studies explored the impact of pregnancy related lumbopelvic pain on the sufferer as well as how osteopathic care and the therapeutic alliance in osteopathy provided benefit to patients with the condition.

3. What are we asking you to do?

We are asking you to send out an invitation to participate in research to members of your team/organisation.

4. Why do we need access to your facilities/staff/students?

The members of your team/organisation have potential participants who are eligible for participation in this study. Their expertise and experience qualify them for eligibility to contribute valuable views which could assist with the development of data in the form of new clinical guidance for the osteopathic profession.

5. If you are willing to assist in the study what happens next?

If you are willing to assist in the study, you will be sent an invitation to participate in research form. You can then distribute this via email to the members of your team/organisation.

6. How will we use the Information/questionnaire?

The information gathered from this study will be a transcript of a semi-structured focus group interview. This data will be thematically analysed and used to establish the validity of a draft clinical toolkit in the osteopathic management of pregnancy related lumbopelvic pain. All names of participants will be anonymised. Following transcription all recordings will be destroyed. All personal data will be destroyed at the end of the PhD project.

7. Will the name of my organisation taking part in the study be kept confidential?

8. Yes, both the name of the organisation and names of participants will be kept anonymous.

9. What will taking part involve? What should I do now?

- Sign and return the **Gatekeeper Consent Form** provided.
- **For participants who are aged under 16 only**, please make sure **Signed Parental Consent Forms** are collected back **BEFORE distributing the questionnaire**.

Should you have any comments or questions regarding this research, you may contact the researchers: Ross Johnston [REDACTED] Prof Jaynie Rance [REDACTED] Dr Rachel Hunter [REDACTED]

This study has received ethical approval from Faculty of xxxxx Research Ethics & Governance Subcommittee (insert FREGSC reference number and date of approval)

Contact Details of Researcher Ross Johnston [REDACTED]
Contact Details of Academic Supervisor (student studies only)

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchintegrity@swansea.ac.uk and your communication will be re-directed to an independent person as appropriate.

In the interests of safety for the researcher, Swansea University Research Integrity: Ethics & Governance Committee would advise researchers not to include home addresses or personal telephone numbers (mobile or home) as contact details for participants.

Guidance Note: In order to access research participants, the researchers may have to make contact with 'gatekeepers' to participants (e.g. teachers, doctors etc.), who may have a role in arbitrating access and / or the protection of participants. Parents should also be considered to offer a gatekeeping role for potential research participants and should be consulted with regards to planned research being undertaken with their children. Through parents being consulted and versed with the proposed study would enable them to consider the study and give due regard to providing consent for their child to participate. Excessive reliance should not be placed on gatekeepers to recruit participants to research studies. The position of 'gatekeepers' may vary enormously and where the gatekeeper is in a position of power with respect to the potential research participants, a situation may arise where the potential participant may feel coerced or pressurised to take part in research. Another problem could be that the 'gatekeepers' do not explain the research to the participant appropriately. It is the responsibility of the researcher therefore to ensure that potential participants do understand what taking part in the research involves, and that they do so freely by going through a thorough process of voluntary and informed consent.

GATEKEEPER CONSENT FORM

Name of Researchers:

Please tick to confirm your understanding of the study and that you are happy for your organisation to take part and your facilities to be used to host parts of the project.

Please add some brief information about your project here that clarifies exactly what the gatekeeper is agreeing to

1.  I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. ✓ I understand that participation of our organisation and students/members in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.
3. ✓ I understand that any personal information collected during the study will be anonymised and remain confidential.
4. ✓ I agree for our organisation and students/members to take part in the above study.
5. ✓ I agree to conform to the data protection act

Name of Gatekeeper: Charles Millward

13 Sept 23



Name of Researcher: Ross Johnston

06/09/23



Name of Person taking consent:
(if different from researcher)

Date:

Signature:

Appendix 20 - Pre-interview Presentation for Study 3

Pregnancy Related Lumbopelvic Pain (PR-LP)

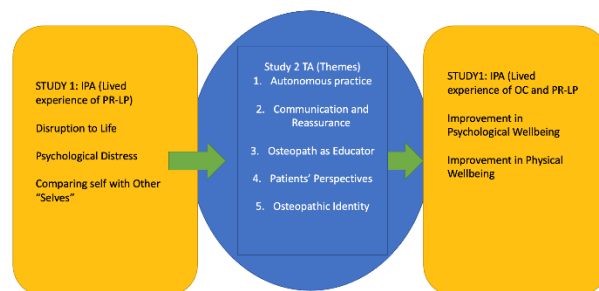
- PR-LP remains a significant problem which causes significant distress and disability to expectant mothers.
- Poorly managed PR-LP is predictive of perinatal outcomes and pain post-partum as well at successive pregnancies.
- Little was understood around the lived experience of PR-LP and how osteopathic care (OC) contributed therapeutically to this.

Overview of Project

- Study 1: This project, sought to explore the lived experience of PR-LP and how OC assisted with this problem, from the perspective of the mothers. An interpretive phenomenological analysis (IPA) of 6 pregnant women was conducted to explore this from their own perspective via Study 1.
- In light of the findings, as follow-up study (Study 2) explored how osteopaths made sense, established and derived meaning from their therapeutic relationships with PR-LP patients. This provided a new understanding of how the therapeutic alliance (TA) was established in OC for PR-LP

Development of a clinical toolkit: OC in PR-LP

- Clinical toolkits have been used in health and social care to strategies to foster adoption of evidence-based and best practice. Toolkits are a collection of adaptable documents used to inform and facilitate implementation and are understood to increase the use of evidence-based approaches.
- The toolkit developed from the data, derived from Study 1 and Study 2 of this PhD project aims to establish focused areas of good practice in the osteopathic management of PR-LP with a view to *optimising* care of patients who present with PR-LP.
- As such, This study (Study 3) represents the preliminary validation process of the use of this toolkit within osteopathic education, postgraduate training and. The completed toolkit may also be disseminated as a practice guide for osteopathic (and related physical medicine professions) as part of, or following peer-review publication of the data from the PhD project



Appendix 21 - Draft Clinical Toolkit for the OC Management of PR-LP

Theme 1: Autonomous Practice

Based on the findings of this research osteopaths made sense of their initial establishment of the TA by considering the concept of how structure governed function in a regionally interdependent way. The osteopaths then used physical outcomes of improvement and relative risk of medical complications to the viability of pregnancy to establish how to treat their patients. The osteopaths applied this reasoning to make decisions regarding the best way to care for their patients in a fluid and individualised manner.

Autonomous Practice (AP)
AP1: Begin management by triaging patient for risks to mother and baby
AP2: Discuss theoretical risks of osteopathic care to pregnancy
AP3: Identify any fear or worry around PR_LP and explain how structure and function and related techniques may soothe pain
AP4: Be adaptable - consider modifying your assessment and treatment to more general and less specific treatment where appropriate.
AP5: Communicate positive changes that occur in treatment and at successive visits

Theme 2: Communication and Reassurance

Based on the findings of this research the osteopaths prioritised communication and reassurance from both affective (soothing) and cognitive (practical) perspectives. They combined these forms of reassurance together with understandings of how the use of language and meaning impacted their patients. A key feature here was the length of treatment time which osteopaths felt gave them the freedom to develop trust and empower their patients.

Communication and Reassurance (CR)
CR1: Give affective (comforting) and cognitive (educational) reassurance to increase your patient's ability to cope.
CR2: Take time to build trust, demonstrate empathy, compassion and understand the patient's boundaries.
CR3: Avoid threatening language which stresses concepts such as "alignment" and "positional lesions".
CR4: Aim to establish the patient's understanding of PR-LP and how osteopathic care can impact this.

CR5: Strengthen your patient's sense of agency to re-empower them in their roles (mother, spouse, caregiver) for pre and post-partum.

CR6: Be sensitive to how patients can feel isolated by PR-LP, develop strategies which can help with this feeling.

Theme 3: The Osteopath as Educator

Based on the findings of this research the osteopaths highlighted that a key feature of their TA was to manage expectations of PR-LP. This was often done via offering explanations and reframing or contesting the advice of other healthcare practitioners such as GPs, physiotherapists and midwives. The Osteopaths felt that by normalising PR-LP and pregnancy that they were able to encourage women to modify, rather than stop their activity and therefore increase their agency, meaning that they were less afraid of the future and could live with confidence despite their PR-LP.

Osteopath as Educator (OE)

OE1: Prioritise understanding and managing patient expectations.

OE2: Use active listening to understand the patient's narrative as much as possible.

OE3: Normalise pregnancy and PR-LP.

OE4: Assess your patient's understanding of the advice of other healthcare providers (OHPs) and address in clearly and simply anything that is not understood.

OE5: Modify recreational activity and ADLS rather than stop activities.

Theme 4: Patients' Perspectives

Based on the findings of this research, the osteopaths considered that situating themselves within the patient's perspective and reflecting on how they experienced PR-LP was a key aspect of management. The osteopaths felt that the underlying components of this experience were characteristic of emotional and psychological distress.

Patients' Perspectives (PP)

PP1: Reflect on the limitations and capabilities of osteopathic care in PR-LP,

PP2: Consider the patients lived experience of PR-LP and how this impacts their thoughts about their health, their pregnancy and coping with day to day life.

PP3: Reflect on how the patient's role and identity as a spouse, parent or woman in general may be impacted by PR-LP

PP4: Reflect on how isolation could be a feature of PR-LP and what strategies may be employed to assist with coping.

PP5: Be open to discussing the emotional impact of PR-LP and be sensitive to how this guides management.

Theme 5: Osteopathic Identity

Based on the findings of this research, the osteopaths felt that their professional identity as osteopaths added to the therapeutic alliance. Key aspects of the importance of touch and the shared experience of palpation and changes in the tissues were considered to benefit the relationship between the practitioner and patient. The osteopaths also felt that some aspects of this relationship were hard to describe and created an unspoken therapeutic dialogue that was specific to OC.

Osteopathic Identity (OI)

OI1: Use palpation and therapeutic touch to comfort the patient

OI2: Consider how palpation and therapeutic touch may act as a vehicle to deliver and strengthen both affective (comforting) and cognitive (educational) reassurance.

OI3: Consider sharing your experience of palpation as tissue changes with the patient, do they perceive this in tandem with you?

OI4: Reflect on your therapeutic intention as you palpate and treat your patient's tissues, does this impact therapeutic outcome?

OI5: Reflect on the broader psychological and physiological changes that may be impacted by osteopathic care.

Appendix 22 – New Codes Constructed within Study 3 which Align to Themes in Study 2

Study 3 Codes in italics.

Study 2. Theme 1: Autonomous Practice

- i) Pregnancy as a Specialism*
- ii) Individual Style*
- iii) Adjunctive Treatment*

Study 2. Theme 2: Communication and Reassurance

- i) Blended Reassurance*
- ii) Patient Centred Care*
- iii) Fostering Relationships*

Study 2. Theme 3: The Osteopath as Educator

- i) PR-LP Community*
- ii) Collaborative Dialogue*

Study 2. Theme 4: Patients' Perspectives

- i) Nocebic Language*
- ii) Pain Memories*
- iii) Practitioner Gender*

Study 2. Theme 4: Osteopathic Identity

- i) Common Sense*
- ii) Antipathy to Medicine*
- iii) Resistance to Clinical Guidance*
- iv) Decline of Osteopathy*

Appendix 23-Outline of Critical Appraisal Skills Programme (CASP)

Table 23.i)

Results of the Quality Appraisal (Critical Appraisal Skills Program) for Cohort Studies

Study	1	2	3	4	5	6	7	8	9	10	11	12
Albert et al. (2006)	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Al-Obaidi et al. (2000)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beales et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bewyer et al. (2009)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Buer & Linton (2002)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Chown et al. (2008)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Croft et al. (1995)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Damen et al. (2002)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edwards & Toutt (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ferber et al. (2005)	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Flink et al. (2009)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gilbert & Allan (1998)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hoogendoorn et al. (2002)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kovacs et al. (2005)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kovacs et al. (2012)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Licciardone et al. (2002)	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Linton & Hallden (1998)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Marnach et al. (2003)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
McCracken (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
McCracken & Gutiérrez-Martínez (2011)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
McCracken & Yang (2006)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

McCracken et al. (1992)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
McCracken et al. (2004)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Noren et al. (2002)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Olsson & Nilsson-Wikmar (2004)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Olsson et al. (2012)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Palsson et al. (2015)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Setse et al. (2009)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stewart et al. (1989)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sutherland & Morley (2008)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Swinkels-Meewisse et al. (2006a)	Yes	yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Swinkels-Meewisse et al. (2006b)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tang et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tang et al. (2007)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thomas et al. (1999)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(1) Did the study address a clearly focused issue? (2) Was the cohort recruited in an acceptable way? (3) Was the exposure accurately measured to minimise bias? (4) Was the outcome accurately measured to minimise bias? (5) (a) Have the authors identified all important confounding factors? b) Have they taken account of the confounding factors in the design and/or analysis? (6)a) Was the follow up of subjects complete enough? b) Was the follow up of subjects long enough? (7)What are the results of this study: (sufficient bottom line results, strong association with exposure and outcome (8) How precise are the results? (9) Do you believe the results? (10) Can the results be applied to the local population? (11) Do the results of this study fit with other available evidence? (12) What are the implications of this study for practice?

Table 23.ii

Results of the Quality Appraisal (Critical Appraisal Skills Program) for Systematic Reviews

Systematic Review	1	2	3	4	5	6	7	8	9	10
Assendelft et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Bouwmeester et al. (2009)	Yes	Yes	Yes	Can't tell	N/A	Yes	Yes/adequate	Yes	Not Clear	No
Bronfort et al. (2004)	Yes	Yes	Yes	Can't tell	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Chiarotto et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Franke et al. (2014)	Yes	Yes	Yes	Yes	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Franke et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Guillard et al. (2016)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Hall et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Hayden et al. (2005)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Kelly et al. (2011)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Licciardone et al. (2005)	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes/adequate	Yes	Yes	Yes
Majchrzycki et al. (2010)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Pincus et al. (2002)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Wertli et al. (2014)	Yes	Yes	Yes	Yes	N/A	Yes	Yes/adequate	Yes	Yes	Yes
Williams (2007)	Yes	Yes	Yes	Yes		Yes	Yes/adequate	Yes	Yes	Yes

(1) Did the review address a clearly focused question? (2) Did the authors look for the right type of papers? (3) Do you think all the important, relevant studies were included? (4) Did the review's authors do enough to assess quality of the included studies? (5) If the results of the review have been combined, was it reasonable to do so? (6) What are the overall results of the review? (7) How precise are the results? (8) Can the results be applied to the local population? (9) Were all important outcomes considered? (10) Are the benefits worth the harms and costs?

Table 22.iii

Results of the Quality Appraisal (Critical Appraisal Skills Program) for Randomised Control Trials

RCT	1	2	3	4	5	6	7	8	9	10
Andersson et al. (1999)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aure et al. (2003)	Yes	Yes	Yes	No	Yes	Yes	Yes	Can't tell	Yes	Yes
Hoving et al. (2006)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Korthals-de Bos et al. (2003)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Korthals-de Bos et al. (2005)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Licciardone et al. (2003)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Licciardone et al. (2010)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Licciardone et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sjödahl et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Williams et al. (2003)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Williams et al. (2004)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Woods & Asmundson (2008)	Yes	Yes	Yes	Can't tell	No	Yes	No	Yes	Yes	Yes

(1) Did the study address a clearly formulated research question? (2) Was the assignment of participants to interventions randomised? (3) Were all participants who entered the study accounted for at its conclusion? (4)a) Were the participants 'blind' to intervention they were given? (b) Were the investigators 'blind' to the intervention they were giving to participants? (c) Were the people assessing/analysing outcome/s 'blinded'? (5) Were the study groups similar at the start of the randomised controlled trial? (6) Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)? (7) Were the effects of intervention reported comprehensively? (8) Was the precision of the estimate of the intervention or treatment effect reported? (9) Do the benefits of the experimental intervention outweigh the harms and costs? (10) Can the results be applied to your local population/in your context?

Table 23.iv

Results of the Quality Appraisal (Critical Appraisal Skills Program) for Qualitative Studies

Study	1	2	3	4	5	6	7	8	9	10
Brown & Johnston (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Close et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crowe et al. (2010)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
De Souza & Frank (2000)	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Yes	Yes	Yes
Hellström (2001b)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes
Osborn & Smith (1998)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes
Osborn & Smith (2006)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes
Slade et al. (2009)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Smith & Osborn (2007)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes
Snelgrove & Liossi (2013)	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Snelgrove et al. (2013)	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes
Vroman et al. (2009)	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes
Walker et al. (2006)	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes
Mackenzie et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Elden et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bergström et al. (2014)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(1) Was there a clear statement of the aims of the research? (2) Is a qualitative methodology appropriate? (3) Was the research design appropriate to address the aims of the research? (4) Was the recruitment strategy appropriate to the aims of the research? (5) Was the data collected in a way that addressed the research issue? (6) Has the relationship between researcher and participants been adequately considered? (7) Have ethical issues been taken into consideration? (8) Was the data analysis sufficiently rigorous? (9) Is there a clear statement of findings? (10) How valuable is the research?