

**CLINICAL DECISION MAKING AND
THERAPEUTIC APPROACHES OF
EXPERIENCED OSTEOPATHS**

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Abstract

Clinical decision-making refers to the social, cognitive and interactive processes by which practitioners make choices in relation to the examination, diagnosis, treatment and management of patients. It is fundamental for effective and efficient clinical practice and is central to professional autonomy and accountability. As the profession continues to grow, osteopathy is playing an increasingly important role in musculoskeletal healthcare. While research has identified the clinical decision-making approaches taken by a range of healthcare professions, there is limited understanding of how osteopaths make decisions in relation to clinical practice. The aim of this research was to construct an explanatory theory of the clinical decision-making and therapeutic approaches of experienced osteopaths in the UK.

A total of twelve UK registered osteopaths participated in this qualitative study, situated in the interpretive research paradigm. Purposive sampling was used to initially select participants. Subsequent theoretical sampling, informed by data analysis, allowed specific participants to be sampled. Data was initially collected from twelve semi-structured interviews with nine participants, which were audio-recorded. As the study approached theoretical sufficiency, a further three participants were observed and video-recorded during a patient appointment, which was followed by a video-prompted reflective interview. Toward the end of the study, two participants were theoretically sampled for a second interview, based on their conceptions of practice. A constructivist grounded theory approach involving the constant comparative method of analysis was used to code and analyse data to construct a substantive theory of osteopathic clinical decision-making and therapeutic approaches.

Data analysis resulted in the construction of three qualitatively different therapeutic approaches which characterised participants and their clinical practice, termed, Treater, Communicator and Educator. The therapeutic approach adopted by practitioners influenced their approach to clinical decision-making, the level of patient involvement, their interaction with patients, and their therapeutic goals. Participants' conception of practice, which lay on a continuum ranging from technical rationality to professional artistry, was identified as the key factor which contributed to their therapeutic approach. Practitioners' conception of practice was influenced by their educational experience, view of health and disease, epistemology of practice knowledge, theory-practice relationship and their perceived therapeutic role.

The findings indicate that there is variation in osteopaths' therapeutic approaches to practice and clinical decision-making, which are influenced by their overall conception of practice. These findings provide the first explanatory theory of the clinical decision-making and therapeutic approaches of osteopaths, and have implications for osteopathic practice, education and research.

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Publications and Presentations

The following work within this thesis has been presented elsewhere:

Peer-reviewed journals

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Thomson, O.P., N.J. Petty, C.M. Ramage and A.P. Moore (2011). Qualitative research: Exploring the multiple perspectives of osteopathy. *International Journal of Osteopathic Medicine* 14(3): 116-124.

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Peer-reviewed abstracts

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Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Signed _____

Dated _____

Definitions and Abbreviations

A.T. Still- Andrew Taylor Still

ASO- American School of Osteopathy

AOA- American Osteopathic Association

BA- Bachelor of Arts

BCOM- British College of Osteopathic Medicine

BOA- British Osteopathic Association

BOS- British Osteopathic Society

BSc (Hons) Ost - Bachelor of Science in Osteopathy

BSc (Hons) Ost Med- Bachelor of Science in Osteopathic Medicine

BSO- British School of Osteopathy

BSc Ost- Bachelor of Osteopathy

Dip Ost- Diploma in Osteopathy

CGT- Constructivist Grounded Theory

CPD- Continuing Professional Development

DoH- Department of Health

EBP- Evidence-Based Practice

ESO- European School of Osteopathy

GCRO- General Council and Register of Osteopaths

GOsC- General Osteopathic Council

HVT- High Velocity Thrust

IAO- Incorporated Association of Osteopaths

ICF- International Classification of Functioning, Disability and Health

LCOM- London College of Osteopathic Medicine

MP- Member of Parliament

MSc- Master of Science

NHS- National Health Service

NICE- National Institute for Clinical Excellence

OBU- Oxford Brookes University
OCC- Osteopathic Centre for Children
OEI- Osteopathic Education Foundation
OMT- Osteopathic Manipulative Therapy
OSCE- Objective Structured Clinical Examination
PPP- Professional Profile and Portfolio
QAA- Quality Assurance Agency for Higher Education
RCT- Randomised Controlled Trial
RQ- Recognised Qualification
S2K- Standard of Proficiency 2000
UK- United Kingdom
UK BEAM- United Kingdom, Back Pain, Exercise, Active Management and Manipulation
USA- United States of America
WCPT- World Confederation for Physical Therapy
WHO- World Health Organisation

Chapter 1: Introduction

1.1 Introduction

The purpose of this study was to obtain a theoretical insight into the clinical decision-making and practice approaches (termed ‘therapeutic approaches’ in the context of this study) of experienced osteopaths in the UK. This chapter introduces the professional and personal driving factors of this research study and provides the rationale of the thesis. It then gives an overview of the structure and content of the thesis by way of a summary of each chapter.

1.2 Thesis rationale

1.2.1 Professional motivation

Since the first osteopathy school was established in the UK in 1917, the osteopathic profession has continued to grow and establish itself in the landscape of musculoskeletal care in the Great Britain. Osteopathy displays many of the hallmarks of a healthcare profession such as a regulatory body, a national research council and a professional title which is protected under law. As the number of UK osteopathic education institutions increase, so do the number of practicing osteopaths. Practitioner numbers are currently over 4500 and as a whole, osteopaths carry out more than seven million consultations every year (General Osteopathic Council 2012b) with this figure likely to increase as the numbers of practitioners also increases. Further, osteopathy has been included in the NICE guidelines for non-specific low back pain thereby increasing availability and patient choice (National Institute for Health and Clinical Excellence 2009).

Like many other professions, day-to-day osteopathic practice can be complex and challenging, and modern professional healthcare practice requires practitioners to interact with “significant others (clients, caregivers, health care team members), to structure goals and health management strategies based on clinical data, client choices, and professional judgement and knowledge” (Higgs and Jones 2000, p.11). As a profession, osteopathy is required to have an understanding of how practitioners view and use knowledge and their process of clinical reasoning (Richardson et al. 2004).

Recognising that a modern profession is required to be reflective and possess a discrete body of knowledge to be used within its teaching and practice, a number of health professions have critically reflected on their practice and the clinical reasoning of their practitioners. Healthcare research has identified the nature of clinical reasoning, expertise and practice approaches of a range of different health professions ranging from nursing (Benner et al. 1992; Chaffey et al. 2010), to occupational therapy (Fleming 1991b; Paterson et al. 2005, 2006) and to physiotherapy (Jensen et al. 2000; Edwards et al. 2004a). With continued research, these healthcare professions are developing a deeper understanding of their practice, practitioners and patients, thereby advancing as a profession and enhancing patient care. However, little-to-no research exists which explores these aspects of practice in osteopathy. Since Still's conception of osteopathy in 1874 (Still 1897), osteopaths have relied upon the rich source of osteopathic principles and concepts to guide practice and education. These principles and concepts have served to underpin curricula, training and practice. However, research into *how* or *if* these concepts guide osteopathic practice and clinical decision-making is virtually non-existent. Without research to provide current knowledge of these aspects of practice, a number of questions are left unanswered, such as 'How do clinical decision-making processes employed by osteopaths compare and contrast with other health professions?' 'How do novice and experienced osteopaths make clinical decisions?' 'Are there variations in clinical decision-making and practice approaches amongst practitioners?' 'What are the attributes of osteopathic expertise and how can practitioners develop them?' These are challenging and complex issues and require a range of research approaches, but they are crucial to osteopathy's continued development in the areas of professional standards, education and patient care.

1.2.2 Personal motivation

The personal motivation for this PhD arose from my experience in explicating my clinical decisions as a practicing osteopath, teacher and clinic tutor to osteopathy students in the UK and Scandinavia. I qualified as an osteopath in 2006, and enjoyed the learning experience and environment so much that I returned as a lecturer and later a clinic tutor. Now the 'shoe was on the other foot', and in my role as a clinical tutor I was required to monitor my students clinical practice and decision-making as well as be aware of my own.

As a practitioner, I saw clinical practice to be a confusing, complex stream of actions and interactions. As a clinical tutor I was intrigued, but also frustrated at the wide variety of clinical approaches that colleagues would take when guiding students during clinical supervision. Whilst I was aware of the different sub-disciplines of osteopathy, which had generally developed from the different anatomical regions upon which treatment can be applied (for example, ‘cranial’, ‘visceral’ and ‘structural’) I considered this a superficial and inadequate explanation for the difference in practice approaches that I and others (such a patients and students) had experienced. Without a deeper level of understanding of the different practice and decision-making approaches I felt I was limited both as an educator and as a practitioner. I became fascinated with what made osteopaths do what they do, and asked myself questions such as: ‘Why that particular treatment, in that particular way, with that particular patient?’ ‘What made osteopaths move from examining that area to this one?’ ‘Why did some practitioners advise an exercise plan and others did not?’ As I was having these thoughts, so were the students that I taught and supervised. As a clinical tutor I was frequently approached by students asking me how and why I did what I did and even why other clinical tutors practiced in their own particular way. These experiences combined with a questioning mind launched me into the fields of clinical reasoning and decision-making, and my exploration of them in the context of osteopathy, thereby contributing to the development of the study’s research questions, which are discussed in section 4.7.

1.3 Thesis outline

A brief overview of the content and structure of this thesis, and a synopsis for each chapter is presented below.

Chapter 1 introduces the area of research and the context in which it is set. It describes the professional and personal rationales for the study, and provides an overview of the contents of the thesis.

Chapter 2 discusses the historical developments of osteopathy, from its conception in the USA to its establishment as a regulated healthcare profession in the UK. The chapter provides the reader with an insight into the foundations of modern osteopathy. A

timeline of historically significant events that have served to shape the form of osteopathy in the UK is presented at the end of the chapter.

Chapter 3 begins by examining the different definitions of osteopathy, and considers its development as a profession. The chapter then critically examines the osteopathic principles and concepts which some consider underlie clinical practice, followed by a discussion of the relationship of evidence-based practice to osteopathy. The major sub-disciplines of osteopathy are presented in order to provide justification and context for the findings of this research.

Chapter 4 details a journey through the historical developments of clinical reasoning, and critically reviews the theory and research associated with clinical reasoning in medicine and other healthcare professions. The chapter then examines the different forms of knowledge and how they interrelate with clinical practice and reasoning. It goes on to critically evaluate the various models of clinical reasoning proposed both theoretically and derived from research. The chapter continues by exploring the nature of expertise and its relationship to clinical reasoning. Finally, the research questions and aims are presented as a result of the critical review of the literature in this chapter and in Chapter 3.

Chapter 5 describes and justifies the methodological approach adopted in this research. It examines the choice of methodology in light of the research questions and field of clinical reasoning. The chapter continues by positioning the study in the interpretive research paradigm and explains how my epistemological and ontological decisions have influenced my choice to use constructivist grounded theory. Finally, the chapter discusses the measures taken to ensure the trustworthiness of this research study.

Chapter 6 discusses the methods used in this study to gather data and derive meaning from these data through analysis, in line with the iterative nature grounded theory. The chapter begins by outlining the strategies used to access, recruit and sample participants for this study. It continues by discussing the ethical considerations relevant to this research study and how such issues were managed. Finally, this chapter presents an explicit and detailed account of the methods of data collection and analysis which were employed to construct an explanatory model of osteopathic clinical decision-making

and therapeutic approaches, serving as an audit trail, thereby increasing the dependability and confirmability of the study.

Chapter 7 presents the findings of the study. The chapter begins by presenting the backgrounds of the study participants to provide context for the findings. Along the way, each aspect of the theory is supported by quotations from participant interviews and serves as supportive evidence for the theoretical claims made. The data is organised to illustrate the key conceptual relationships which form the constructed theory, and the findings are presented in the following way: Participants' professional views, and then their general clinical practices and procedures. Three theoretical models of therapeutic approaches which were constructed from the data are then presented and compared. The chapter finishes by presenting participants' conception of practice as the core category, followed by the individual influencing factors. The full theory of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study is presented and concludes this chapter.

Chapter 8 discusses the findings in the context of the extant literature. The chapter begins by re-visiting the research questions and outlining how the findings have addressed them. It then proceeds to outline 6 key summary points which are considered to be theoretical insights of the clinical decision-making and therapeutic approaches of the participants. The study and the constructed theory are examined and critiqued, so that the reader can judge the quality of the thesis. The chapter continues by considering the authenticity of the research findings, and my final reflection on the research journey and the impact I had on the study. Finally, I discuss the study's contribution to the knowledge base of osteopathy and the implications the findings have for practice, education and further research.

Footnotes are provided throughout this thesis to offer explanatory insights

Chapter 2: The development of osteopathy

2.1 Introduction

The ways in which osteopaths in the UK practice and clinically reason today is intimately linked to the professions' history, which has underpinned the principles, concepts, and theories of osteopathy. This chapter provides an insight into the foundations of modern osteopathy and its development as a healthcare profession. The literature reviewed in this chapter provides context not only to the following chapters that explore osteopathic concepts, principles and practice in Chapter 3 and clinical reasoning in Chapter 4, but also provides context to the study's findings presented in Chapter 6. A timeline of historically significant events that have served to shape the form of osteopathy in the UK is provided towards the end of this chapter in Table 2.2

2.2 The beginnings of osteopathy

The beginnings of osteopathy may be traced back to the USA, during the latter half of the 19th century, when an American frontier physician, Andrew Taylor Still, founded osteopathy in response to what he felt was a severely inadequate and often harmful system of patient care (Seffinger et al. 2010). Born in 1828, in Virginia, Still moved to Kirksville, Missouri with his father, a Methodist minister¹ who established a school for Native American Indians merging religious teachings with medical practice (Trowbridge 1991). His father's use of natural medicinal substances (such as herbs) influenced Still, and as a child he assisted his father in medical procedures and learnt the Bible of the Methodist church. He was a dedicated hunter, and early on he developed a deep curiosity of anatomy from dissecting the bodies of the animals he caught; he later went on to dissect the bodies of dead native American Indians (Collins 2005). During the 1850s, Still, moved with his first wife and two children to Kansas, where he began to read and practice medicine with his father (Peterson 2003). It was here that he obtained formal training at a school in Kansas City, however, no records are available to confirm where and when his training occurred (Trowbridge 1991). More than a decade

¹ Still was a deeply religious man (as were many during that time period), and this is reflected in much of his early writings (Collins 2005).

later, civil war broke out and Still enlisted in the army where he served in the cavalry division. During his military career, Still's first wife passed away and soon after he served as a military surgeon which many have claimed had a profound influence on him and his future aspirations to develop an effective and natural approach to healthcare and medicine (Peterson 2003; Collins 2005).

On returning from military service, three of Still's children died of spinal meningitis. Having observed, and according to Seffinger et al. (2003) having practiced, the somewhat crude practice of medicine of the time (for example, using mercury, poultices and employing blood-letting), this tragic event was a significant factor in Still separating himself from orthodox medicine. It was during this period in the 1880s, that Still "philosophically divorced" himself from the orthodox medical community and was intent on developing a new practice of healthcare which was philosophically underpinned by the body's natural healing capacity (Seffinger et al. 2003, p.4). He took an interest in bone-setting² and began practicing magnetic healing, which, at the time claimed to "combine spiritualism and healing by seeking to restore the balance of an invisible magnetic fluid circulating throughout the body" (Peterson 2003, p.21). Still amalgamated these methods and developed anatomically and biomechanically based theories and was considered as the 'Lightning Bonesetter' (Collins 2005). In 1874, Still "flung to the breeze the banner of osteopathy" (Still 1897, p.108), referring, perhaps to a coming together of his developed theories to give rise to osteopathy (Peterson 2003). He was openly critical of the medical profession, and according to some at the time, he would often be heard saying "medicines will not do; we must have something better" (Booth 1924, p.46). His 'better way' was osteopathy, and he believed that when healthy, the body could produce all of the 'drugs' it needed to ensure health and cure itself.

After moving from Kansas to Kirksville, Still began to practice using mainly manipulative and magnetic techniques, which later on became predominantly manipulation (Peterson 2003). He used his detailed knowledge of anatomy and body mechanics, or as he frequently termed "the machinery of human life" (Still 1897, p.33),

² *Bonesetters* were some of the earliest practitioners of spinal manipulation before the advent of osteopathy, chiropractic and physiotherapy. While spinal manipulation can be traced back to Hippocrates (460–385 BCE), the craft of bone-setting became popular throughout Europe and Asia in the 16th century as a natural healing therapy (Pettman 2007).

to examine and treat patients using only his hands. The goal of his treatment was to identify the underlying cause of the disease and remove the obstruction so that the body could heal itself and return to normal function (Peterson 2003). Many of the theories and treatment approaches that Still developed were based on the importance of adequate blood flow to organs and body regions, as can be seen from an extract from his autobiography;

“You should know the cause of a disease and be able to remove it. You know the course of an artery, nerve, and vein, and before you take your hands off should know that you have removed all obstructions to the nerve, vein, and artery, giving force and nourishment to the depleted locality”

(Still 1897, p.229)

Still’s ‘new’ drugless, non-surgical approach to healthcare quickly grew in popularity, and it did not take long before his practice became inundated with patients seeking help, many of which he turned away as he was unable to meet this surge in demand (Pettman 2007). In 1887, the growth in demand of osteopathy, led Still to cease practicing in order to open the first teaching institution of osteopathy, the American School of Osteopathy (ASO), in Kirksville, Missouri (Trowbridge 1991). Many patients and osteopathic colleagues recognised the value and benefit of A.T. Still’s approach in treating the structure (the body) to effect the function (physiology)³, and the importance he placed on manual treatment, especially palpation⁴. However, he was unable to convince the medical profession of the day, and there was (and perhaps still is to this day) a philosophical cleft between the two disciplines (Pettman 2007).

Many writers of osteopathic history and philosophy, note how Still was conversant in a broad range of subjects, including history, science, religion and philosophy all of which strongly influenced his thinking about health and disease (Booth 1924; Deasen 1934; Seffinger et al. 2003). His comprehensive knowledge was a common theme throughout much of his writings, and appeared to shape his belief that osteopathy should be regarded as a science and a philosophy, at the core of which were biological and anatomical principles (Still 1910). It proved to be difficult then, as it is now, to provide

³ The ‘structure-function’ principle was to become one of Still’s most popular ideas, and is discussed further in Chapter 3.

⁴ *Palpation* in this context refers to the purposeful use of hands to touch and feel characteristics of the body and associated structures such as the texture, tone and temperature of body tissues and joints.

a unanimous definition of osteopathy (Seffinger et al. 2010). An example of an early definition offered by Still is:

“Osteopathy is that science which consists of knowledge of the structure and functions of the human mechanism, by which under the scientific treatment peculiar to osteopathic practice, in harmonious accord with its own mechanical principles may recover from displacements, disorganisations, derangements, and consequent disease and regain its normal equilibrium of form and function in health and strength”

(Still 1897, p.3)

Still’s concept of restoring health by way of maintaining the integrity of the ‘human mechanism’ puts forward a comprehensive approach to healthcare, and he believed that the natural or ‘normal’ state of a human being was health.

2.3 Osteopathy in the UK

By the start of the 1900s, a small number of American trained osteopaths began practicing in the UK, and when numbers grew sufficiently, the British Osteopathic Society (BOS) was formed in 1903 (Collins 2005). However, it was not until the return of John Martin Littlejohn from the USA, that marked the turning point for osteopathy in the UK (Collins 2005). In 1892, Littlejohn, originally from Glasgow, emigrated to the USA upon advice to seek healthier and warmer climates for his poor health. After taking up a teaching position at the American School of Osteopathy, he encountered Still, and received regular treatments for his chronic respiratory condition. With a background in physiology, Still’s approach fascinated Littlejohn and he enrolled to study osteopathy at the ASO. Littlejohn was among the first cohort of students to graduate from the American School of Osteopathy, and returned to the UK regularly between 1898 and 1913, when at this time he settled permanently in the UK, in Essex (Collins 2005). During his regular visits to the UK between these years, he gave lectures on osteopathy to the Society of Science, Letter and Arts in London and treated hospital patients in London.

Throughout the first ten years of the 20th century, many of the osteopaths in the UK were self-taught or had served as apprentices to American-trained osteopaths (Baer 1988). Wanting to fulfil the need of formally trained osteopaths in the UK, Littlejohn

went about opening a school, and on the 7th March, 1917, the British School of Osteopathy (BSO) was established in London. As dedicated to osteopathy as he was, Littlejohn organised the structure of the four year course, and worked as a teacher and administrator, and according to Collins (2005) he never received any profit or salary.

2.4 Drive towards recognition, regulation, and registration

By 1910, with a small number of osteopaths, many with questionable standards of training, twelve osteopaths convened in Manchester to establish the British Osteopathic Association (BOA) (Baer 1988; Collins 2005). The BOA was recognised by the American Osteopathic Association (AOA), and according to Collins (Collins 2005) it's key purpose was to uphold professional standards and provide the public with a record of suitably qualified osteopaths. Almost a decade later, the BOA set up the 'Osteopathic Defence League', with an American trained osteopath, William Streeter as the Honorary Secretary (Collins 2005). The roles of this league were to alter the law, and put osteopathy on the same platform of legal equality as the orthodox medical profession, and to make the principles of osteopathy more widely known (Collins 2005).

The League gained strong support from within and outside of osteopathy. One key supporter was Arthur Greenwood MP, who had held the position of Parliamentary Secretary for the Minister of Health in 1924. With his influence, and the growing support for osteopathy, a debate in the House of Commons proceeded regarding the introduction of legislation to ensure the recognition and legal registration of osteopathy (Collins 2005). However, after considerable debate in the Commons, with Littlejohn as spokesman of the BOA, the then Minister of Health, Neville Chamberlain insisted that:

“If they want to have a register of osteopaths set up in this country, the first thing for them to do is to start colleges of their own”

(cited in Collins 2005, p.54)

Chamberlain felt that the osteopathic curricula had to approach the standards of education and professionalism throughout the rest of the UK (Collins 2005).

In 1930, still in pursuit for legal recognition, the BOA sought to obtain a Royal Charter to incorporate it as a legal entity, in the hope that the legal protection of the title ‘Osteopath’ would follow. After a lengthy effort, the application for a Royal Charter was refused (Walker and Budd 2002), though the process itself had stirred up a deep interest in osteopathy, and sparked debates between osteopaths and the medical profession (Collins 2005). Bills to establish a government-sanctioned register for osteopaths were submitted to the House of Commons in 1931, 1933 and 1934, all of which were unsuccessful (Baer 1988). It is interesting to note that in the unsuccessful Bill of 1934, the BOA sought to acquire similar rights as medical practitioners (for example, to perform minor surgeries and to certify death), but the Health Minister at the time found the Bill and these requests unacceptable (Walker and Budd 2002).

In 1935, the Select Committee of the House of Lords met again to consider a Bill for the registration and regulation of osteopaths (Walker and Budd 2002). The Bill, which had support from the BOA, the BSO, the Osteopathic Defence League, and the Incorporated Association of Osteopaths (IAO) strongly asserted that “an unqualified and incompetent quack and complete charlatan would be disbarred from practicing osteopathy” (Baer 1988, p.19). The parties met intensely over a period of twelve days, but the Bill yet again failed. The opposition, internal struggles, the inability to readily define osteopathy, only one educational institution (the BSO) which offered a substandard curriculum and a very large number of unqualified practitioners in operation have been cited as reasons for the failure of the Bill (Baer 1988).

The findings of the Select Committee led to a recommendation that the osteopathic bodies concerned set up a voluntary register and reputable educational system (Walker and Budd 2002). Upon this recommendation, the three main bodies in the UK; the British Osteopathic Association, Incorporated Association of Osteopaths and the National Society of Osteopaths united together to form the General Council and Register of Osteopaths (GCRO) (Baer 1988). In 1936, the GCRO was incorporated as a company, whose main functions were to 1) regulate the standard of qualification and professional conduct; 2) protect the public by providing them with details of competently trained osteopaths (Collins 2005). The GCRO offered different levels of membership to respond to the varying levels of training osteopaths had at the time. Full membership was granted to graduates of American colleges, and once appropriate

changes were made to the curriculum, BSO graduates were permitted full membership (Baer 1988). Associate members included those lacking specific academic qualifications, but had been practicing for a reasonable amount of time, and if desired could upgrade to full membership status by satisfying the examination board (Collins 2005).

Throughout the following four decades, membership of the GCRO steadily grew, and by 1989 there were 1308 members (Collins 2005). Up until this time, professional regulation and compulsory registration had been continually discussed, and in 1989 a Working Party was established by The King's Fund⁵ to consider the scope and content of legislation to regulate osteopathy (Walker and Budd 2002). Legislation documents contained a draft 'Osteopaths Bill', and a framework for the establishment of the General Osteopathic Council (GOsC), which would have the statutory duty to develop, promote and regulate the osteopathic profession (Collins 2005). Existing osteopaths wanting to apply for registration had a period of two years (between 1998-2000), to submit an application (Walker and Budd 2002). Applicants had to compile a comprehensive application, in the form of a Professional Profile and Portfolio (PPP) (Collins 2005). After this 'transition period', only those osteopaths who were in possession of a Recognised Qualification (RQ) from an osteopathic education institution recognised by the GOsC would be eligible for registration. Failure to register, with either of these two routes during the transition period, would mean it would be an offence, and illegal to use the title of 'Osteopath'. Hearings of the Osteopaths Bill occurred for almost two years in both the House of Commons and House of Lords, following which the Osteopaths Act 1993 was given Royal Assent on the 1st July 1993, with the act coming into effect in May 2000 (Walker and Budd 2002).

Part of The King's Fund report highlighted that continued registration should be conditional on practitioners' continued osteopathic education (Collins 2005). The GOsC introduced mandatory Continuing Professional Development (CPD), and osteopaths must complete thirty hours of CPD every year, of which fifteen hours must involve learning with others (General Osteopathic Council 2010a). While many CPD courses provide additional training in areas of osteopathic practice, such as further manual

⁵ *The King's Fund* is an independent charitable organisation that works to improve health care in the UK by providing research and health policy analysis and publications (The King's Fund 2012).

therapy treatment techniques, practitioners may also attend courses that fall outside the traditional spectrum of osteopathic training such as medical imaging, exercise rehabilitation and acupuncture, and may contribute to a cross pollination of knowledge and skills between different healthcare professions. Many of these short CPD courses are advertised to practitioners throughout the national osteopathic press (for example, The Osteopath Magazine 2013).

In the early 1990s specialities and ‘sub-disciplines’ began to emerge as is evident by post- graduate training courses in animal osteopathy and visceral osteopathy⁶ (Collins 2005). Another notable institution arising from around the same period was The Osteopathic Centre for Children (OCC) which not only provides osteopathic care to many infants and babies, but also offers postgraduate courses in paediatric osteopathy (The Osteopathic Centred for Children 2012).

2.5 Recent developments (post 1995)

By 1997 the GOsC was formally operational, and the first Registrar and Chief Executive, Madeleine Craggs appointed Derrick Edwards (formally Vice-Principal of the BSO) as the Director of Education. The Education Department of the GOsC commenced drafting documents for the process leading to Recognised Qualification status, and thirteen osteopathic institutions showed an interest in being recognised providers of osteopathic education. Currently, there are eleven osteopathic education institutions (OEIs) in the UK (General Osteopathic Council 2012e), one of which (the London College of Osteopathic Medicine) offers postgraduate training in osteopathy, exclusively to medical doctors. The training courses currently recognised by the General Osteopathic Council are shown in Table 2.1 overleaf.

⁶ These sub-disciplines are described in more detail in the following chapter.

Osteopathic education institution (OEI)	Location
British College of Osteopathic Medicine	London
British School of Osteopathy	London
The College of Osteopaths (validated by Middlesex University)	Hertfordshire
The College of Osteopaths (validated by Keele University)	Staffordshire
The European School of Osteopathy	Kent
Leeds Metropolitan University	Leeds
London College of Osteopathic Medicine (qualified medical doctors only)	London
Oxford Brookes University	Oxford
The Surrey Institute of Osteopathic Medicine	Surrey
Swansea University	Swansea

Table 2.1 Osteopathy training courses recognised by the General Osteopathic Council (General Osteopathic Council 2012e)

Due to diversities in their historical development, different osteopathic institutions in the UK place emphasis on different aspects of osteopathic techniques and practice approaches, providing a diverse and colourful professional landscape. For example, the British College of Osteopathic Medicine (BCOM) was founded in 1936 by an eminent Osteopath and Naturopath⁷, Stanley Lief (British College of Osteopathic Medicine 2013a), as such the osteopathic education at BCOM has incorporated many aspects of naturopathy such as nutritional advice and hydrotherapy (British College of Osteopathic Medicine 2013c). Whereas, the European School of Osteopathy (ESO) was originally founded in Paris, France in 1951 (European School of Osteopathy 2013). Owing to the popularity of cranial and visceral approaches to osteopathy in France and continental Europe, these aspects of practice have been, and continue to be strong features in the osteopathic education at the ESO (European School of Osteopathy 2013).

With a desire to ensure that the standard of osteopathic education was consistent amongst the OEIs, in 1998 the GOsC produced a document which outlined the ‘Standards of Proficiency’, which was considered to be “required for the safe and competent practice of osteopathy” (General Osteopathic Council 1998, p.2). The

⁷ *Naturopathy* is a form a natural medicine which uses natural treatment modalities (such as massage, hydrotherapy and dietetics) to encourage the innate healing capacity of the body (British College of Osteopathic Medicine 2013c).

contents of the Standards of Proficiency were based on the King's Fund report of 1991, and outlined eleven key areas of importance. In 1999, the Standard of Proficiency document was upgraded (named the 'S2K' document), and made more explicit reference to the context and content of modern osteopathic practice (General Osteopathic Council 1998). For example, the standard of 'Accountability' was added to emphasise the need for osteopaths to view themselves as autonomous professionals who are part of a wider healthcare community, such as G.Ps and other NHS healthcare services.

In 2012, the S2K document was further revised⁸ with an updated format (General Osteopathic Council 2012a). The Osteopathic Practice Standards continue to play a central role in the requirements for osteopathic training and to enable existing practitioners continued registration with the GOsC (General Osteopathic Council 2012a). The GOsC (2012a) is required by law to ensure that OEIs are obtaining the standards set out in the practice standards, ensuring the safe and competent practice of osteopathy. In order to safeguard this, in 2005 the GOsC successfully appointed the Quality Assurance Agency for Higher Education (QAA) to conduct reviews of OEI's curriculum and programme of study (Quality Assurance Agency for Higher Education 2005). Currently, the QAA reviews three main areas; clinical and academic standards (in line with the Osteopathic Practice Standards), the quality of learning and the effectiveness of teaching, and finally governance and management of the OEI concerned (Quality Assurance Agency for Higher Education 2005). The main purpose of the QAA review is to enable the GOsC to make recommendations on approval to the Privy Council, (as in the RQ process) and to assure itself more generally that OEIs and the programmes they provide operate effectively (Quality Assurance Agency for Higher Education 2005).

Another important development was the setting-up of the National Council of Osteopathic Research (NCOR) in 2003. NCOR was set up to work with OEIs, the GOsC and practicing osteopaths to help facilitate the development of osteopathic research (National Council for Osteopathic Research 2013). Several osteopathic

⁸ In 2010, the GOsC reviewed both the *Standard of Proficiency* and the *Code of Practice* and combined them into one document termed *Osteopathic Practice Standards* (General Osteopathic Council 2012a). I had the opportunity to contribute to the development of the revised document by participating in focus groups and providing written feedback on the proposed revisions.

educational institutions followed in the drive to promote research and postgraduate learning, and some OEIs currently offer postgraduate degrees courses in osteopathy to Master's and Doctoral level (for example, British College of Osteopathic Medicine 2013b; British School of Osteopathy 2013; College of Osteopaths 2013).

The osteopathic profession continues to grow, and practitioner numbers are currently in excess of 4500 (General Osteopathic Council 2010b). The GOsC continue to regulate the osteopathic profession, and the profession is moving towards playing an important role in the British healthcare system. For example, in May 2009, the National Institute for Health and Clinical Excellence (NICE) published guidelines to improve the early management of non-specific low back pain in the UK (National Institute for Health and Clinical Excellence 2009). The guidelines include osteopathic treatment as a form of manual therapy to be recommended to patients with non-specific low back pain of between 6 weeks and 12 months duration (National Institute for Health and Clinical Excellence 2009). This was considered to be a significant acknowledgment of the value of osteopathy, and has the potential to enhance patient care by enabling practitioners to evaluate their practice against the NICE guidelines using published audit support tools (Vogel 2009).

A major project which is currently under development is a 'Revalidation Scheme for Osteopaths'. In February 2007, the Government published its White Paper *Trust, Assurance and Safety*, a central feature of which was the requirement for regulators to introduce schemes of revalidation⁹ for all healthcare professionals by no later than 2012 (General Osteopathic Council 2009b). The scheme developed by the GOsC is currently being piloted, and consists of the four domains of 'professionalism', 'communication and patient partnership', 'safety and quality in practice' and 'knowledge, skills and performance' (General Osteopathic Council 2009a). Following the pilot phase, the profession will be re-consulted with re-validation to be implemented in 2014 (General Osteopathic Council 2012c). It is hoped that the revalidation scheme will enhance patient care and help ensure that osteopaths continue to meet the required standards set

⁹ The report of the Government's Non-medical Revalidation Working Group outlined twelve principles that revalidation schemes should meet including 'quality', 'continued professional development' and public involvement (General Osteopathic Council 2009b).

by the GOsC. Table 2.2 summarises the major events pertaining to the development of osteopathy in the UK.

Osteopathic timeline
1828- Founder of osteopathy Dr Andrew Taylor Still born, Virginia, USA
1874- 22 nd June, A.T Still “flung to the breeze the banner of Osteopathy”
1892- A.T Still opened first school of osteopathy (the American School of Osteopathy)
1902- First American trained osteopaths arrive in the UK
1903- The British Osteopathic Society formed
1910- Formation of the British Osteopathic Association
1913- Littlejohn returns permanently to the UK
1917- First UK osteopathy school, the British School of Osteopathy, established in London
1936- Formation of the General Council and Register of Osteopaths (GCRO)
1989- The King’s Fund consider the scope and content of legislation to regulate osteopathy
1993- Passing of the Osteopaths Act and formation of the General Osteopathic Council
1998- GOsC publish Standards of Proficiency document (S2K)
2000- Osteopaths Act comes into force, the title of ‘Osteopath’ becomes legally protected
2003- National Council for Osteopathic Research (NCOR) is formed
2009- Osteopathy included in NICE ‘management of non-specific low back pain’ guidelines
2010- First Professional Doctorate in Osteopathy launched
2012- Revised Standards of Proficiency document
2012- Piloting of the Revalidation Scheme for Osteopaths

Table 2.2 Timeline of historically significant events of osteopathy in the UK (modified from Evans 2007)

2.6 Chapter conclusion

This chapter has reviewed the major historical developments of osteopathy including its conception as a health discipline in the USA and the UK. The rich and colourful professional, educational and political history of osteopathy, spanning across three centuries have shaped the professions’ current status and practice today. The literature reviewed in this chapter provides context to the following chapters and to the study’s findings. There is a paucity of research into osteopathic clinical practice and reasoning,

however, much has been written about osteopathic principles and concepts and how they may inform different approaches to osteopathic practice and reasoning. The next chapter explores some of these underlying theories of osteopathy, providing context, and contributing to the rationale of this research study.

Chapter 3: Osteopathic concepts, principles and practice

3.1 Introduction

Osteopathic practice is considered to be embedded within a framework of concepts and principles. It is thought that the osteopathic principles can be woven into the clinical practice of individual osteopaths. Knowledge of the inter-relatedness of the osteopathic principles is believed to facilitate practitioners to make diagnostic, treatment and management decisions with their patients. This chapter begins by examining the different scopes of practice of osteopaths in the UK and USA. The chapter then explores the varying definitions of osteopathy, and evaluates the professional development of osteopathy. It continues by critically examining the major osteopathic concepts and principles, and goes on to discuss evidence-based practice in relation to osteopathy.

3.1.1 Scopes of practice

At this point, it is pertinent to highlight that osteopathy throughout the world has taken different paths over the course of the time, with the most marked difference being between British and American trained osteopaths. Osteopaths in the USA are licensed to practice the full scope of medicine, including surgery and the prescription of medications. In the UK, osteopaths are autonomous practitioners, focused on the diagnosis, treatment, prevention and rehabilitation of musculoskeletal disorders, and the effects of these conditions may have on patients' general health (General Osteopathic Council 2010b). As Lesho explains, "American Doctors of osteopathy follow accepted allopathic (medical) methods of diagnosis and treatment but place additional emphasis on the achievement of normal body mechanics as central to good health" (Lesho 1999, p.477). However, Jelous (1999) is critical of the route American osteopathy has taken, in his lecture titled 'Accepting the death of osteopathy: a new beginning' he states; "Osteopathy has died, what remains is only an empty skeleton of the dynamic gift we were once given. The essence of osteopathy is gone and extinguished" (Jealous 1999, p.19). This criticism appears to be supported by Johnson and Kurtz (2001), who found that in their study that the vast majority of American osteopathic physicians employed osteopathic manipulative therapy (OMT) on less than 5% of their patients, and instead

preferred to use more traditional medical interventions such as pharmaceutical treatments and surgical procedures. In comparison osteopaths in the UK perform OMT on 80% of patients during their first appointment (Fawkes et al. 2010). This appears to provide evidence of the diminished use of hands-on manual therapy amongst American osteopathic practitioners, and illustrates a major difference compared UK osteopaths.

This research aims to explore the clinical reasoning and therapeutic approaches of osteopaths who are registered with the General Osteopathic Council, and practice in the UK. However, as the philosophical roots and governing osteopathic principles remain largely the same throughout the osteopathic professions, both UK and American perspectives will be discussed.

3.1.2 Defining osteopathy

Even since the times of A.T. Still, osteopathy has grappled with a unifying definition, which could incorporate its philosophical principles and broad range of therapeutic techniques. Even today it has been said the profession is still yet to fully define itself or its core set of professional values (Tyreman 2008). From an international perspective, osteopathy has been described by the World Health Organisation (WHO) as:

“A system of medicine that emphasises the theory that the body can make its own remedies, given normal structural relationships, environmental conditions, and nutrition. It differs from allopathy primarily in its greater attention to body mechanics and manipulative methods in diagnosis and therapy. “

(World Health Organisation 2010, p.43)

In the UK, the GOsC define osteopathy today as:

“A system of diagnosis and treatment for a wide range of medical conditions. It works with the structure and function of the body, and is based on the principle that the well-being of an individual depends on the skeleton, muscles, ligaments and connective tissues functioning smoothly together.”

(General Osteopathic Council 2010b)

The first definition provided by the WHO, the overarching organisation of health professions throughout the world, implies that osteopathy is a complete ‘system of

medicine’, and is arguably more consistent with the original ideas of its founder A.T. Still, as discussed in the previous chapter. This definition may have largely come about from the extended practice rights of American osteopaths. More relevant to this thesis is the second definition provided by the governing professional body in the UK, the GOsC. This definition reflects the relatively limited scope of practice of UK practitioners, and places osteopathy within the field of manual-physical therapy with a strong emphasis on the neuro-musculoskeletal system, rather than a total system of medicine and healthcare. For the purpose of context and comparison, when attempting to define the Physical Therapy profession internationally, The World Confederation for Physical Therapy (WCPT) states that:

“Physical therapy is concerned with identifying and maximizing movement potential, within the spheres of promotion, prevention, treatment and rehabilitation. Physical therapy involves the interaction between physical therapist, patients or clients, families and care givers, in a process of assessing movement potential and in establishing agreed upon goals and objectives using knowledge and skills unique to physical therapists”.

(World Congress of Physical Therapy 2010)

On reading the definitions of osteopathy and physical therapy it is interesting to highlight some differences between them, and note their similarities. The definitions of both physical therapy and osteopathy suggest concepts such as ‘movement’ and ‘function’ as central elements of practice. However, the definition of physical therapy appears to be more explicit in recognising the importance of involving the patient, their families and care givers during the development of a management and treatment plan, in contrast to both definitions provided of osteopathy. Both definitions of osteopathy tend to focus on the body, and the osteopaths role of treating dysfunctions which may occur ‘within’ the patient. The definition of physical therapy alludes to the collaboration and interaction between patient and practitioner, whereas the definition of osteopathy focuses the interaction of anatomy and movement. This absence of the patient in the osteopathic definitions raises questions such as ‘what sort of role do patients play in osteopathic treatment and management?’, and ‘what is the nature of the osteopath-patient interactions and relationships?’ At first glance the definitions of osteopathy do not appear to be explicitly aligned to notions of patient-centred care and contemporary views of health and disability. For example, the WHO developed a classification system

to guide health services and facilitate communication about health across different disciplines, termed the International Classification of Functioning, Disability and Health (ICF) (World Health Organisation 2001), which is structured around the WHO framework of health and disability. The ICF views patients within the context biopsychosocial model of health (Borrell-Carrio et al. 2004), takes into account the social and psychological aspects of pain and disability, and does not consider them as only as 'medical' or 'biological' in nature. While some consider that the osteopathic principles and concepts are consistent with the biopsychosocial model of health and the guidelines set out by the WHO (Penney 2013). Further research, such as this study, is required to generate knowledge of *how* or *if* these concepts are acted out in day-to-day osteopathic practice and their role in osteopathic clinical reasoning.

3.1.3 Osteopathy as a profession

This section provides additional context, and overviews osteopathy's development as an emerging profession within the health care landscape. A 'profession' is considered to be an occupational group with a discrete knowledge base (Richardson et al. 2004), that must demonstrate the "ability to successfully engage in self-directed and lifelong learning, to contribute to the knowledge base of the profession and to practice in a manner which demonstrates professional autonomy, competence and accountability" (Cant and Higgs 1999, p.46). It is argued that osteopathy, like many complementary therapies, has undergone a process of 'professionalisation', with the major events discussed in Chapter 2. Cant and Shamar view 'professionalisation' as a "type of occupational change and formation that involves unification, standardisation, and the acquisition of external legitimacy" (Cant and Sharma 1996, p.157). They consider that the process of transforming a complementary therapy into a profession requires the group to engage in five major strategies; unification, codification of knowledge, social closure (limiting the number of practitioners and instituting stringent training programmes), and alignment to the scientific paradigm and support from strategic elites (Cant and Sharma 1996). As osteopathy is considered a complementary therapy, it is noteworthy to consider its professionalisation in view of these strategies of transformation and is discussed below.

1) Unification- As outlined in previously in Section 2.4, the formulation of a single statutory register of osteopaths and extending the level of training and standards

provides a degree of unity to the osteopathic profession. Registration with the GOsC is compulsory for practice and it is the responsibility of the governing body to uphold standards so as to protect the public and optimise care; **2) Codification of knowledge-** Structured training programmes which have been awarded recognised qualification status (RQ) by the GOsC, and research illuminating areas of osteopathic practice have begun to develop the knowledge base of the profession. The findings from this research contribute to this process; **3) Social closure-** Osteopathy now has strictly regulated training courses, a legally protected title of ‘Osteopath’ and measures in place to discredit those practitioners who do not practice to agreed standards. These measures help provide osteopathy with exclusivity and social closure; **4) Alignment to the scientific paradigm-** The role of science in osteopathy has been debated, and some claim that since its conception osteopathy has always endeavoured to incorporate science into its practice (Lucas and Moran 2007). While scientific knowledge constitutes just one form of knowledge necessary for practice (discussed later in section 4.5.1), it is this type of knowledge that is considered a ‘higher level’ of evidence within the current model of evidence based medicine (Sackett 2000). However, scientific research methods such as the randomised control trial (RCT) are required to explore specific aspects of professional healthcare practice, such as the therapeutic effectiveness of osteopathic treatment interventions (for example, UK BEAM Trial 2004). From this perspective, osteopathy has begun to engage with the scientific paradigm through a number of measures. The profession now produces and publishes research papers in osteopathic and non-osteopathic peer-reviewed journals, holds annual conferences in advances in osteopathic research and has developed its training courses (postgraduate and undergraduate) to incorporate the science-based subjects such as biomechanics, physiology and anatomy and also includes scientific research method modules within its undergraduate training courses; **5) Support from strategic elites-** In the UK, osteopathy has received support from the medical profession in the form of the National Institute for Clinical Excellence (National Institute for Health and Clinical Excellence 2009), and also support from the state by way of The Houses of Parliament (The Osteopaths Act 1993).

Taken together, these features suggest osteopathy has engaged positively in the project of professionalisation. However, Richardson (1999a) explains that a profession needs to be accountable, autonomous and its members needs to be willing to interact and adapt to

changes in practice and politics. Having ‘professionalised’ itself, osteopathy is required to maintain its professionalism by way of a commitment to the task and maintenance of standards and ethics via a code of practice and continued life-long professional learning and development of its members, such as those set out in the current Osteopathic Practice Standards and Code of Practice (General Osteopathic Council 2012a). However a profession is also required to be critical and reflective, constantly evaluating, questioning and developing its knowledge base and practice. The findings of this research aim to address in part the strategy associated with the codification and development of the professions knowledge base. By exploring osteopathic clinical reasoning, this thesis aims to identify, capture and make explicit aspects of clinical practice which have yet to be explored through research, making the knowledge generated accessible to members of the profession (Wyatt 2001).

3.1.4 The current status of osteopathic practice in the UK

Currently, the number of osteopaths in the UK is over 4500 (General Osteopathic Council 2012b). Osteopaths are increasingly being considered as significant providers of manual therapy especially for the management of non-specific low back pain (National Institute for Health and Clinical Excellence 2009). Osteopaths in the UK are autonomous practitioners who require a broad ranging knowledge and skill base in order to diagnose and manage patients with a range of musculoskeletal and non-musculoskeletal conditions presented in practice (General Osteopathic Council 2001; Fawkes et al. 2010). With regards to presenting symptoms, spinal pain is by far the most common condition treated by osteopaths (General Osteopathic Council 2001; Fawkes et al. 2010). A survey in 2006 suggests that approximately 30,000 people consult osteopaths every working day (General Osteopathic Council 2010b, 2012d). Practitioners employ a broad spectrum of therapeutic interventions, with ‘hands-on’ manipulative techniques (such as spinal mobilisation and high-velocity thrust manipulation) as the preferred form of treatments modalities for practitioners in the UK (General Osteopathic Council 2001; Fawkes et al. 2010) as well as internationally (Johnson and Kurtz 2003; Orrock 2009). A 2001 survey of the UK osteopathic profession conducted by the GOsC (2001), showed that almost 75% of responders regularly used joint mobilisation techniques, and almost 50% regularly used high-velocity thrust techniques, as part of their treatment, and similar statistics are supported by more recent research (Fawkes et al. 2010). Osteopathy remains largely a form of

private healthcare with more than 80% of patients funding their own treatment (General Osteopathic Council 2012d).

Recent research conducted by the National Council for Osteopathic Research (NCOR) has generated data on osteopathic practice in the UK (Fawkes et al. 2010). Whilst the primary aim of this research was to pilot test and further develop a ‘standardised data collection tool’ which eventually could be used to collect data from practicing osteopaths on a national level, the research generated a preliminary insight into osteopathic practice in the UK, including areas such as ‘patient demographics’, ‘patient symptom profile’, ‘osteopathic patient management’, ‘treatment outcomes’ and ‘financial implications of care’ (Fawkes et al. 2010). The findings from the NCOR study suggest that the osteopathic treatment provided were “varied and complex” as evidenced by the wide range of treatment and management interventions used by participants including manual therapy, exercise and educational approaches (Fawkes et al. 2010, p.12). The findings also showed that the financial responsibility for treatment was met by individual patients in 90% of cases, which appear to support the results from the GOsC survey (General Osteopathic Council 2012d). However, as only 342 practitioners (9.4% of the UK profession) participated in the NCOR research study, caution should be applied, and further research is required to establish the transferability of the findings to the wider osteopathic profession.

3.2 Osteopathic principles and practice

Osteopathic practice is thought to be underpinned by the philosophical and theoretical foundations upon which the profession is built. There is a paucity of published research on the clinical practice and reasoning of osteopaths, which this current thesis aims to address. However, there has been no shortage of models detailing osteopathic assessment procedures and the application of osteopathic manipulative therapy (OMT). Since the early days of osteopathy, practitioners have used a range of therapeutic techniques, with the osteopathic principles underpinning their application. The range of specific therapeutic application appears to have resulted in distinct (although informal) sub-disciplines, and currently OMT is applied to: the neuro-musculoskeletal system, often called ‘structural osteopathy’ (for example, Gibbons and Tehan 2009); internal organs, called ‘visceral osteopathy’ (for example, Barral and Mercier 2005) and applied

to the skull, called cranial osteopathy¹⁰ (for example, Liem et al. 2004), and also treatment models developed by specific and influential individuals, such as ‘Classical Osteopathy’ (for example, White 2000), which was devised by Littlejohn and later by his student John Wernham. The following section will discuss the major concepts and principles which underpin the current practice of osteopathy.

3.2.1 The osteopathic principles

Regardless of the different scopes of practice in the USA and UK or the specific models of OMT application (such as, visceral, structural or cranial), adherence to the principles of osteopathy is considered by many to be fundamental to guide the practice of osteopathy (DiGiovanna and Schiowitz 1997; McKone 2001; Stone 2002; Seffinger et al. 2010; Cotton 2013; Paulus 2013). Seffinger et al. (2003) organised Still’s original concepts into a set of principles in terms of health; disease and patient care, as illustrated in Table 3.1 below.

<p>Health</p> <ol style="list-style-type: none"> 1. Health is a natural state of harmony. 2. The human body is a perfect machine created for health and activity. 3. A healthy state exists as long as there is a normal flow of body fluids and nerve activity.
<p>Disease</p> <ol style="list-style-type: none"> 1. Disease is an effect of underlying, often multifactorial, causes. 2. Illness is often caused by mechanical impediments to normal flow of body fluids and nerve activity. 3. Environmental, social, mental, and behavioural factors contribute to the aetiology of disease and illness.
<p>Patient care</p> <ol style="list-style-type: none"> 1. The human body provides all the chemicals necessary for the needs of tissues and organs. 2. Removal of mechanical impediments allows optimal body fluid flow, nerve function, and restoration of health. 3. Environmental, cultural, social, mental and behavioural factors need to be addressed as part of the management plan. 4. Any management plan should realistically meet the individual needs of the patient.

Table 3.1 Classic osteopathic philosophy (Seffinger et al. 2003)

¹⁰ Cranial osteopathy endorses the concept of ‘involuntary motion’, which is described as a motion which passes throughout the entire body (not just the skull), and is separate from other forms of voluntary motion such as locomotion or respiration (Stone 2002). However, cranial osteopathy has attracted a degree of controversy throughout the osteopathic profession due to, what some describe as ‘biologically outlandish’ claims of its mechanism which has no ‘scientific basis’ (Hartman 2005; 2006).

As can be seen from Table 4.1, Still's concept of osteopathy as a complete system of diagnosis and treatment placed an emphasis how 'normalisation' of the body structures and it functioning in order to treat 'mental' and physical diseases. To practice osteopathy effectively, Still considered that the practitioner must have a detailed and meticulous knowledge of anatomy, as evidenced by his prominent quote below:

“The chicken has a head, a neck, a breast, a tail, two legs, two wings, two eyes, two ears, two feet, one gizzard, one crop, one set of bowels, one liver, and one heart. This chicken has a nervous system, a glandular system, a muscular system, a system of lungs and other parts and principles not necessary to speak of in detail. But I want to emphasize, they belong to the chicken, and it would not be a chicken without every part or principle. These must all be present and answer roll call or we do not have a complete chicken.”

(Still 1899, p. 17)

While Still posited that anatomy is at the centre of osteopathic diagnosis and treatment, he emphasised the importance of integrating anatomy and physiology, which he believed 'governed each other' (Hulett 1922, p.25). Still states that “where you begin with anatomy, you end with anatomy” (Still 1899, p.16), and this has been, and arguably remains, the mantra for many osteopaths and students alike. Modern-day osteopathic authors continue to place anatomy as central to osteopathy and when set in the context of osteopathic principles provides the fundamental basis of osteopathic practice (Schiowitz et al. 1997; McKone 2001; Stone 2002).

From the beginnings of its conception osteopathic scholars have written and proposed different definitions of osteopathy, and several attempts have been made to obtain a consensus. Evidence of a continued lack of agreement, the GOsC are attempting to define a scope of practice of UK osteopathy (General Osteopathic Council 2009a). However, in 1922, based on the writings of A.T. Still (and others), the first profession-wide attempt at unifying the osteopathic philosophy into digestible rules was made with representatives from each of the osteopathic medical schools in the USA (Rogers et al. 2002). In 1953, the ideas were summarised and updated, in a statement developed at the Kirksville College of Osteopathy and Surgery. The Kirksville group offered a 'tentative formulation' of a teaching guide for faculty, hospital staff, and student body (Special Committee on Osteopathic Principles and Osteopathic Technique by Kirksville College

of Osteopathy and Surgery 1953). Their interpretation of the osteopathic concepts, describe what are now considered to be the four major principles of osteopathy, and are shown in Table 3.2.

- | |
|---|
| <ol style="list-style-type: none">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 interrelated.4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function. |
|---|

Table 3.2 Four major principles of osteopathy (Special Committee on Osteopathic Principles and Osteopathic Technique by Kirksville College of Osteopathy and Surgery 1953)

Sammut and Searle-Barnes (1998) consider the principles outlined in Table 3.2 as osteopathic ‘philosophies’ as they are derived by ‘logical’ reasoning, rather than by empirical findings through scientific research. This view is supported by Tyreman who argues that the principles are so logical, correct and obvious that they are “self-evident” (Tyreman 2013, p.4). From this perspective, the tenets may loosely play a role in clinical reasoning by acting as practice guidelines during diagnosis, treatment and management.

In 2002, a committee formed from a multidisciplinary group of American osteopathic physicians (Rogers et al. 2002), representing different osteopathic medical disciplines, updated the tenets derived in 1953. The intention was to make the principles more aligned with contemporary biomedical science and notions of patient-centred care (Stewart 2001). The group revised the principles to include the categories of ‘practice’ and ‘patient’ tenets (Rogers et al. 2002, p.63), and are shown in Table 3.3 overleaf.

<p>Practice tenets</p> <ol style="list-style-type: none"> 1. A person is the product of dynamic interaction between body, mind, and spirit; 2. An inherent property of this dynamic interaction is the capacity of the individual for the maintenance of health and recovery from disease 3. Many forces, both intrinsic and extrinsic to the person, can challenge this inherent capacity and contribute to the onset of illness 4. The musculoskeletal system significantly influences the individual's ability to restore this inherent capacity and therefore to resist disease processes <p>Patient tenets</p> <ol style="list-style-type: none"> 1. The patient is the focus of healthcare 2. The patient has the primary responsibility for his or her health 3. An effective treatment programme for patient care is founded on these tenets

Table 3.3 Updated tenets of osteopathy (Rogers et al. 2002)

Upon examination of the tenets overviewed in Table 3.3, the major notable changes were: 1) the inclusion of evidence-based guidelines 2) optimisation of the patient's natural healing capacity and 3) emphasis on health maintenance and disease prevention. The inclusion of tenets pertaining to the patient places greater emphasis on the patient, and that osteopathic management should take the form of a collaborative process of the practitioner and patient 'negotiating', rather than the practitioner applying a set of principles or guidelines to a 'passive' or 'silent' patient. This collaboration should extend beyond the practitioner-patient relationship, but to the wider 'stakeholders' of the patient's well-being. Stone argues that osteopathy might be better placed within a "cooperative system of healthcare", where teamwork and interprofessional dialogue is efficient to ensure that the level of care generated is more centred on all levels of the patient's problem (Stone 1999, p.11). However, to effectively partake in interprofessional cooperation, the osteopathic profession needs to have a well-developed knowledge base, and an understanding of practitioners' clinical decision-making, which this thesis aims to address.

Even with the revised tenets by Rogers and colleagues, the osteopathic principles continue to be a topic of fierce debate¹¹, with a wide range of views from many corners of the profession, whether from the perspective of practice, education or research (Fryer 2011). More than sixty-five years have passed since efforts were made to condense Still's extensive writings into a discernible and concise set of principles and there continues to be little agreement regarding the role that the osteopathic principles should (or do) play in education and practice. The major issues which conjure up debate within the profession include: the original interpretation and meaning of the principles (Cotton 2013; Paulus 2013), the potential contribution that the principles make to the profession's identity (Tyreman 2013), and the relationship of the principles to more modern conceptions of clinical reasoning (Thomson et al. 2011a) and patient-centred healthcare (Thomson et al. 2013). Taking a particularly critical view, Tyreman (2013), considers the osteopathic principles to be vague and ambiguous, lack academic credibility, and fail to distinguish osteopathy from other health professions. In contrast, Paulus (2013) views the osteopathic principles to closely reflect the views of A.T. Still and that they are vital to inform osteopathic practice as well as defining the profession. While some researchers consider that adhering to the principles will be 'harmful' for the reputation and development of the profession (Evans 2013), and potentially result in osteopathy becoming irrelevant in modern healthcare (McGrath 2013).

Notwithstanding the range of views, in the UK the osteopathic principles are deemed to play an essential role in osteopathic clinical reasoning and practice, as evidenced by the current standards of osteopathic practice which state that an osteopath "must understand osteopathic concepts and principles, and apply them critically to patient care" (General Osteopathic Council 2012a, p.9). However, individual practitioners may conceptualise practice concepts, principles and traditions quite differently (Evans 2007). With little research on these areas, currently the role that the principles play in clinical practice and reasoning is speculative and illustrates the need for research and therefore providing further justification for the professional significance of this current research study.

¹¹ A recent edition of *The International Journal of Osteopathic Medicine* (Volume 16 2013) called for papers to be submitted to discuss the role and relevance of the osteopathic principles in the context of modern day healthcare. I was fortunate to contribute a theoretical paper to the special edition (Thomson et al. 2013).

3.2.2 Evidence-based practice and osteopathy

Since the 1980s there has been an escalating move away from clinical practice that is guided purely by belief and tradition, to one informed by research evidence. While the philosophical foundations of evidence-based practice (EBP) date back to the mid-19th century (Sackett et al. 1996), a significant driving force was the initiation of the Department of Health Quality Agenda in 1998 (Department of Health 2000), which in part sought to enhance standards of healthcare practice in the UK by the encouragement of lifelong learning for health professionals. The evidence-based practice ‘movement’ has reached most corners of the world (Kitson 2001; Zaidi et al. 2009) and the EBP model is upheld as the optimal practice philosophy in many healthcare professions, including Medicine (Sackett 2000) and Physiotherapy (Herbert et al. 2001; Portney 2004; Ross and Anderson 2004). The osteopathic profession has not escaped the EBP debate, with many researchers are in agreement that some form of EBP needs to be integrated into the osteopathic approach (for example, Vogel 1994; Green 2000; Fryer 2008; Leach 2008; Licciardone 2008). It has been posited that a more appropriate term is ‘evidence-informed osteopathy’, as it rightly acknowledges that research evidence should not replace practice, rather it should inform and guide it (Green 2000; Fryer 2008). However, what ‘counts’, as evidence is intensely contested, (Gibson and Martin 2003; Henderson and Rheault 2004; Rycroft-Malone et al. 2004), with qualitative research (such as this current research study) not considered as part of the accepted EBP model. Overall, there is mounting discontent with the EBP model as it stands across a number of different healthcare professions, including medicine (Hancock and Easen 2004; Mykhalovskiy and Weir 2004; Porta 2004; Rosenfeld 2004; Tonelli 2006) and physiotherapy (Bithell 2000; Herbert et al. 2001; Shaw et al. 2010) and EBP continues to be debated within the osteopathic profession. Owing to the complexities of the manual therapy interventions, one major concern is that an overemphasis on the use of RCTs and an overreliance on the knowledge generated from these methods, are unlikely to develop the well-rounded and robust knowledge base necessary for osteopathy (Milanese 2011; Thomson et al. 2011b; Petty et al. 2012).

There are also a number of professional barriers which may challenge the development of an evidence-based culture within osteopathy. For example, osteopathic practitioners in the UK appear to be concerned that the implementation of EBP will fail to preserve the osteopathic principles and threaten the profession’s uniqueness (Humpage 2011).

Another barrier may be the philosophical differences between osteopathy and EBP. In light of osteopathy being considered a patient-centred approach to healthcare (Stone 1999; Butler 2010), there may be a number of challenges when marrying together both patient-centred and evidence-based models of practice. One major issue is that the RCT is designed for a biomedical model of healthcare, and it sits toward the top of the evidence hierarchy (Sackett 2000). The RCT assumes homogeneity of patients, and fails to recognise the individuality of the patient and their illness experience, which is one the central pillars of the patient-centred care model (Mead and Bower 2000). This raises the questions of ‘how patient-centred can a model of evidence-based osteopathy ever be? How will the profession and its members bridge the gap between the two separate paradigms? Research, such as the findings from this study, could help to address these issues and explore if and how EBP has been implemented into osteopathic practice.

3.2.3 The concept of somatic dysfunction

Almost since its conception, osteopathic practice worldwide has predominately centred on the concept of somatic dysfunction, which is defined as:

"Impaired or altered function of related components of the somatic (body framework) system: skeletal, arthroidal, and myofascial structures, and related vascular, lymphatic, and neural elements."

(Educational Council on Osteopathic Principles of the American Association of Colleges of Osteopathic Medicine 2003, p.1249)

Many authors within osteopathy claim that these ‘impairments’ may be identified using manual palpation of the patients’ body regions, during clinical examination and assessment procedures (DiGiovanna and Schiowitz 1997; Greenman 2003; Kappler 2003). The acronym 'TART' is sometimes used as a mnemonic for the clinical features of tissue texture, asymmetry, range of motion abnormality and tenderness, all of which are claimed to be findings associated with somatic dysfunction (Kappler 2003). Somatic dysfunction is thought to be amenable to osteopathic manipulative therapy, and osteopaths in the UK employ a broad spectrum of manual therapy techniques which aim to address the findings of TART, predominantly to restore normal function and reduce pain. Table 3.4 overleaf, shows the results of a survey conducted by the GOsC (General

Osteopathic Council 2001), showing the broad range of treatment techniques employed by registered osteopaths in the UK.

Treatment technique	% of response
Soft tissue stretching	78.2
Joint articulation (mobilisation)	74.6
High-velocity low-amplitude thrusts	46.8
Muscle energy technique (MET)	25.7
Cranial sacral technique	23.2
Functional technique	21.6
Visceral techniques	3.2
Per rectal/vaginal techniques	1.3

Table 3.4 Treatment techniques employed by osteopaths in the UK (General Osteopathic Council 2001)

Numerous models and theories have been proposed to explain somatic dysfunction, most of which have little research evidence to support them (for example, Korr 1979; Van Buskirk 1990; Fryer 1999; Fryer 2003). It is beyond the scope of this discussion to assess the merit and validity of these particular theories; however it is worth emphasising that osteopathic researchers, educators and practitioners have placed great clinical and therapeutic significance on the osteopathic somatic dysfunction concept. This importance is evidenced by the wide range of osteopathic manual therapy techniques, which have been developed to treat and manage somatic dysfunction in clinical practice (for example, Hartman 1996; Gibbons and Tehan 2009), thereby suggesting the concept may play a pivotal role in the clinical reasoning and practice approaches of osteopaths. Research does appear to suggest that the identification and treatment of disturbances to the joints and tissues of the body (for example, somatic dysfunction) appear to play a very strong role in the models of practice of many osteopaths in both the UK and the USA (Fryer et al. 2009; Fryer et al. 2010a, 2010b).

Taken together, the definition of osteopathy provided by GOsC (Section 3.1.2) and the concept of somatic dysfunction, it appears that a major goal of osteopathic practice is to identify (usually through manual palpation of soft tissues and joint mobility assessment)

and treat somatic dysfunction. This would involve osteopaths comparing deviations in movement and structure, between the affected and unaffected side of the body, in an attempt to identify the findings of somatic dysfunction, namely 'TART' (Sammut and Searle-Barnes 1998). Sammut and Searle-Barnes offer a useful illustration of how 'TART' relates to the day-to-day practice of osteopathy. In their book 'Osteopathic Diagnosis', Sammut and Searle-Barnes comment:

“Where possible the aim (of the osteopath) is to understand the anatomical and physiological breakdown and the resulting dysfunction in the context of the whole person. The osteopath should attempt to discover where and what the causes of the symptoms are, and also why the dysfunction has occurred, considering its aetiology, predisposing and maintaining factors. The purpose of osteopathic treatment and management is then to enhance the body's response by encouraging the restoration of normal function and also to remove or reduce the person's predisposition to the problem”

(Sammut and Searle-Barnes 1998, p.25)

It can be seen that the description offered by Sammut and Searle-Barnes appears to focus strongly on the osteopath's role and responsibility to identify and 'discover' the manifestations of dysfunction which lie within the patient's body. One may ask 'what is the role and responsibility of the patient during this process'? 'How can the osteopath work with the patient to 'remove the predisposition of the problem'? Without explicitly acknowledging the role of the patient, a role that is active and consensual suggests a paternalistic approach to practice, whereby the patient 'gives themselves up' to the superior knowledge, skills and decision-making of the practitioner (Emanuel and Emanuel 1992). Other authors of popular osteopathic literature also appear to 'forget' the patient when offering practice models and guides. For example, Stone (1999) maintains that osteopathic practice centres on the investigation of the following:

- The pathological state of the tissues
- The origins of the condition
- Maintaining factors that will limit or hinder recovery from the pathological state of the tissues
- Predisposing factors to the condition, which if left unresolved might lead to recurrence of the pathological state of the tissues
- Rationalising management strategies

(Stone 1999, p.25)

Central to Stone's description is the practitioner's role to 'find and fix' the patient's problem. Whether it is finding a pathological reason for the somatic dysfunction, or discovering maintaining factors, Stone's view is consistent with the views of Sammut and Searle-Barnes (1998), which appears to focus on what the *osteopath* can do, rather than what the patient can do *with* the osteopath. The views espoused by Sammut and Searle-Barnes and Stone appear to conflict with other notions of clinical reasoning which promote collaboration and cooperation (Edwards et al. 2004b) discussed in the next chapter (Section 4.6) which appear explicit in placing the patient as a mutual partner with the practitioner, where together they interpret examination findings, set goals and implement treatment and management strategies.

Another common theme in both Sammut and Searle-Barnes and Stone is the focus on the discovery of a causal explanation of the patient's problem, and establishing cause-effect relationships with the patient's body. However, an over reliance on this approach to reasoning is considered to have significant limitations, as it fails to link the local and specific physical findings (such as restricted movement in joints and tissues) with the general and verbal narrative information also generated with the patient (Thornquist 2001b). Further, Edwards and Richardson highlights the problem with using terminology such as 'abnormal' (as in T-A-R-T) during such an assessment, commenting that, "this kind of clinical language fails to acknowledge individual patient values and tends to perpetuate experiences of social exclusion for disabled persons" (Edwards and Richardson 2008, p.186). A major concern of placing concepts such as somatic dysfunction and 'TART' at the heart of osteopathic practice and education, is that they risk reducing the role of the osteopath to purely identify and treat the physical

dysfunctions of patients, rather than emphasising the notions of patient collaboration, partnership and education which are the vital ingredients of patient-centred practice (Mead and Bower 2000).

The S2K document which details the standards of proficiency set out by the GOsC is clear that recognising clinical reasoning is as an area of capability relevant to the “safe and competent practice of osteopathy” (General Osteopathic Council 1998, p.4). The revised standards of practice set out by the GOsC more specifically state that osteopaths are required to have “problem-solving and thinking skills in order to inform and guide the interpretation of clinical and other data, and to justify clinical reasoning and decision-making” (General Osteopathic Council 2012a, p.9). When combined with the osteopathic tenets, the practice standards document provides guidance on how osteopaths *should* clinically reason and practice rather than how they *do* clinically reason and practice. The literature reviewed in this chapter suggests that osteopathy and its philosophical framework is ‘a way of thinking’, or even more loosely an ‘approach’ to patient care. However, there is no existing research-based literature available to offer a deeper and more comprehensive understanding of the clinical reasoning of osteopaths, therefore one can only speculate as to how these principles and practice standards ‘play out’ in real-life practice. The findings from this thesis aim to address some of these issues and generate knowledge of the substantive areas discussed in this chapter.

3.4 Chapter conclusion

This chapter has discussed the different practice models and principles of osteopathy, in order to contextualise the findings of this research. It has considered the progression of osteopathy to a regulated healthcare profession, and provides a picture of the range of approaches taken in modern-day osteopathy. The practice of osteopathy is considered to be underpinned by a core set of principles, concepts and theoretical models which may be seen to focus on the anatomical and physiological capabilities and processes of the human body. However, *if* or *how* these principles and concepts feature in the clinical practice and reasoning of osteopaths, is currently unknown, and provides further justification for this research study. Furthermore, the principles and concepts reviewed in this chapter are predominantly theoretical and can therefore be considered as osteopathic ‘guidelines’ to practice, rather than knowledge developed from research.

There is currently little-to-no research evidence in osteopathy on the socially interactive and cognitive processes which form practitioners' clinical reasoning approaches and guides clinical practice. The next chapter critically reviews the extant research and theoretical literature on clinical practice, reasoning and knowledge from the perspective of a range of health professions.

Chapter 4: Clinical reasoning

4.1 Introduction

This chapter begins by discussing the role that the literature played in this research, in light of the grounded theory methods employed in this study. The chapter then details a journey through the historical developments of clinical reasoning, and explores the research approaches adopted by a range of health professions, providing context for the methodological decisions of this study, explored later in Chapters 5 and 6. It discusses the inter-relatedness of the different forms of knowledge and clinical reasoning then goes on to examine the major models of clinical reasoning proposed both theoretically and derived from research. The chapter then explores the notion of clinical expertise, and its relationship to clinical reasoning and practice. Finally, the literature reviewed in this chapter and the previous chapter, led to the development and refinement of the research questions, which conclude this chapter.

4.2 The use of the extant literature in this research study

Grounded theorists resist the temptation to perform an exhaustive literature review prior to the commencement of a research study. The original grounded theory texts (Glaser and Strauss 1967), and later works by Glaser (1978) advocate being ‘theoretically sensitive’, by entering the field with limited a priori knowledge, and the researcher not committing themselves to specific preconceived theories (Glaser and Strauss 1967). However, other grounded theorists recommend superficially consulting the literature prior to data collection as it can serve to provide insights into the studied phenomenon, giving context and clarity to the research questions (Birks and Mills 2011). As I possessed an awareness of some of the existing theories of clinical reasoning prior to conducting the research, attempting to discard this a priori knowledge would constitute a positivistic “evasion of cognition” (Bryant 2002b, p.7). Furthermore, as part of the PhD process, I was required to develop a ‘Research Plan Approval’ document which needed to be approved academically and ethically before commencing with the research project. A superficial review of the literature pertaining to clinical reasoning and the common research methods used in the field was necessary to prepare the proposal

document and to develop and justify the research questions identified later in Section 4.7. The balance between having extensive a priori knowledge which can stifle the construction of new theory, and possessing enough substantive knowledge to provide what Glaser would describe as “a partial framework of local concepts” (Glaser and Strauss 1967, p.45), is difficult to judge. I recognised this fine balance, and I attempted to take a reflexive, critical and questioning approach throughout the initial superficial literature review.

During the later phases of data collection the extant literature played a more active role in the research study, so as to ‘sharpen my nose’ during analysis and data collection (Urquhart 2002). As categories developed and a substantive theory began to be constructed, the literature was used as a tool to ask questions of the data, develop theoretical sensitivity and acted as a source of ‘secondary data’ which was able to link concepts and help develop categories (Charmaz 2006). Using the literature in this way, at this stage of the research process enhanced my theoretical sensitivity, enabling me to develop a heightened awareness of meaning and analytical insight with regard to the developing theory (Tan 2010). An overview of which literature was engaged with, and when, during the periods of data collection and analysis is provided later in Section 6.8. The literature which helped to inform the later stages of data analysis and led to the development of the substantive theory is reviewed in the context of this study’s findings, in Chapter 8. Finally, an overall summary of the use of the literature during this research study is provided in Appendix 1.

4.3 Defining clinical reasoning

Clinical reasoning has different meaning to different people, and a range of terms exist in the literature which attempt to describe it (for example, Simmons 2010). At present there is little consensus of a universal definition, rather, the term appears to be largely conceptualised according to the professions’ values (Simmons 2010; Thomson et al. 2011a). One of the earliest descriptions is the term *clinical problem-solving*. Clinical problem-solving has its roots in the medical profession and was used to describe the cognitive process medical doctors employed to ‘solve’ patients’ problems (Elstein et al. 1978). As a term ‘clinical problem solving’ fails to capture the complex cognitive and social processes which occur throughout the patient-practitioner encounter for the

following reasons. It somewhat narrowly denotes that the practitioners' main objective is to find and solve problems, by formulating diagnoses and differential diagnoses, with little regard to the treatment and management aspects of the patient (Thomson et al. 2011a). Also, labelling the patient as a 'problem' or collection of 'problems' suggests an imbalance of power, and the view is not consistent with the notion of including the patient in the decision-making process (Edwards et al. 2004b). The concept of problem-solving emerged during a period when the emphasis was on the disease, rather than the patient *with* the disease (Thomson et al. 2011a). For these reasons the term 'problem solving' may be too focused on diagnosis, in order for it to be seamlessly transferred to the practice of osteopathy and other health professions.

Research into health professions over the past twenty-five years has vastly expanded upon the early descriptions of clinical reasoning, in line with contemporary models of health and disability (Engel 1977; Jones et al. 2002). Furthermore, research has shown clinical reasoning to be a complex and dynamic process, which occurs throughout the patient encounter, and moves far beyond the point of diagnosis formation (Fleming 1991b; Jensen et al. 2000; Edwards et al. 2004a). A more fitting description of clinical reasoning is "a process in which the clinician, interacting with significant others (client, caregivers, health care team members), structures meaning, goals and health management strategies based on clinical data, client choices, and professional judgement and knowledge" (Higgs and Jones 2000, p.11). This comprehensive description improves upon earlier descriptions of clinical reasoning in two major ways: 1) it gives the patient a 'voice' so that they may collaborate with the practitioner (and other health professionals) to achieve improved health status; and 2) it recognises that clinical reasoning is a dynamic and interactive process which is informed by different sources and types of knowledge (Thomson et al. 2011a).

The terms *clinical reasoning* and *clinical decision-making* are frequently used interchangeably in the literature (for example, Elstein et al. 1978; Norman 2005; Elstein 2009). Specifically, the term 'clinical reasoning' refers to the social, cognitive and interactive processes which may result in clinical decisions with patients (Higgs and Jones 2008). In comparison, 'clinical decision-making' is the process by which practitioners (with patients) make complex choices between different courses of action, with multiple foci (for example, diagnosis, examination and treatment), using a range of

knowledge sources and often occurring under uncertain conditions (Smith et al. 2008b). Therefore, ‘clinical decision-making’ can be considered both an outcome and a component-process of clinical reasoning (Smith et al. 2008b). For these reasons, the terms clinical decision-making and clinical reasoning are used synonymously in this thesis.¹²

4.4 Approaches to clinical reasoning research

Researchers across the health professions, have been attempting to understand the processes of clinical reasoning for the past four decades, with the majority of the research focusing primarily on the process practitioners use to arrive at a diagnosis (Arocha and Patel 2008; Thomson et al. 2011a). Research into clinical reasoning is faced with numerous difficulties, the main factor being that clinical reasoning is considered to be a social and cognitive process and therefore resides in the ‘head’ of the practitioner, which is largely hidden from observers (Unsworth 2008). With this difficulty in mind, a range of research methods, operating in different research paradigms, have been used to investigate the different aspects of clinical reasoning (Arocha and Patel 2008). Research into clinical reasoning has used both qualitative and quantitative methodological approaches to data gathering and analysis. Early researchers of clinical reasoning operated predominantly in the empirico-analytical paradigm, using largely quantitative research approaches (Arocha and Patel 2008). Quantitative approaches are well suited to limit, test or measure aspects of clinical reasoning (for example, ‘do experts or novices generate more differential diagnoses?’), while qualitative methods will illuminate factors which can help explain an individual’s clinical reasoning (for example, ‘how do practitioners structure their treatment and management plan?’) (Thomson et al. 2011a). Observation and/or video-recording of treatment sessions, interviews with practitioners and patients, and written materials from the practitioners (for example, reflective diaries) have served as data collection methods in research into clinical reasoning all with varying strengths and weaknesses (Thomson et al. 2011a), which will be discussed in the following sections.

¹² These two terms are revisited at the end of this chapter in Section 4.7, where they are further discussed in relation to the research questions and aims.

Throughout the last four decades, there have been notable trends in the methodologies and theories of clinical reasoning research. The medical community were amongst the first to actively research clinical reasoning and have strongly influenced the reasoning approaches adopted in other health professions (Arocha and Patel 2008). The next sections critically review this literature and the historical developments of clinical reasoning research, in order to contextualise the study's findings and also to illustrate the important contribution that clinical reasoning research can make to practice.

4.4.1 1950s and 1960s: The pre-cognitive era

Early medical researchers took a purely behaviouristic approach, relying on psychometric testing to study clinical reasoning. With the focus on behaviour and assessment of clinical reasoning rather than the social and cognitive processes underpinning it, this is sometimes considered as the 'pre-cognitive' era (Patel and Kauffman 2000b). Behaviourism takes the view that thinking and associated action may only be understood by observing and analysing actions (Loftus and Smith 2008a). This behaviouristic approach predominantly focused on the clinical skills of the physicians and medical students, which could be observed and psychometrically measured (Arocha and Patel 2008). Seminal behaviourist research into clinical reasoning occurred from the late 1950s, and much of the research focused on the diagnostic skills of medical students and doctors (Rimoldi 1988). During these experiments, Rimoldi (1988) provided subjects with a card showing pertinent clinical information about a patient case, using which they were then asked to formulate a questioning plan or 'tactics', by requesting further clinical information from cue cards. By analysing the order and frequency of follow-up questions, Rimoldi was able to determine which subject was the student and which was the physician. Rimoldi concluded that "experts ask fewer questions than students or less-experienced doctors but maximize the information value by asking them at the proper time and in the most effective sequence" (Rimoldi 1988, p.274). This early research alluded to the enhanced clinical reasoning capabilities of experienced practitioners.

Whilst behaviourist research has impacted on how clinical reasoning is taught and assessed (for example, providing students with explicit feedback on their performance of clinical skills so that they can correct and enhance their clinical 'behaviour'), it has been unable to explain the socially interactive processes of clinical reasoning (Loftus

and Smith 2008). Some authors have highlighted limitations of the behaviourist approach, suggesting it is conceptually flawed, and fails to take into account context, patient-practitioner interaction or intersubjectivity¹³ (Patel and Kauffman 2000b; Loftus and Smith 2008). Taken together, the behaviourist approach is more suited as a convenient approach to developing methods of assessing clinical reasoning skills, rather than an effective research method to help understand the processes involved.

4.4.2 The 1970s: The age of cognition

The 1970s saw development of the seminal work of Arthur Elstein and colleagues (Elstein et al. 1978; Elstein 2009), which shifted the focus of clinical reasoning research from that of behaviourism to one of cognitivism, and attempted to demonstrate the vital role that the mind and memory play in the process of clinical reasoning. Early cognitive studies were carried out by researchers in the medical profession to investigate the decision-making of physicians and students (Elstein et al. 1978; Schmidt et al. 1990). These studies frequently utilised qualitative approaches to data collection and analysis, which aimed to closely resemble the clinical situation so that researchers ‘search through’ the problem-space¹⁴ of the individual practitioner (Simon 1978). The aim of these research approaches was to ‘reveal’ the information stored in the memory of a practitioner, which informed their action in a particular clinical situation (Lundgren-Laine and Salanterä 2010). The use of verbal reports allowed practitioners to articulate their thinking, thus revealing their decision-making and reasoning, during or after a real-world or close to real-world patient encounter (Arocha and Patel 2008). Typically, these research approaches involved the researcher in collecting ‘raw’ verbalised data, which is un-theorised by the subject with further analysis allowing the researcher to identify and gain an understanding of the cognitive processes and reasoning methods used by the practitioner during the patient encounter (Arocha and Patel 2008).

Verbal reports may be given in ‘real-time’ during the patient encounter or retrospectively. Real-time verbal reports, also called ‘think-aloud protocols’, were originally formed from the ‘Information processing model’ developed by Newell and

¹³ *Intersubjectivity* refers to the existence of multiple views and perspectives which are shared by individuals who share a common world, thereby enabling the making of sense and meaning (Hollway and Wheeler 2002).

¹⁴ The term ‘problem space’ is used by cognitive researchers, to describe the way a particular individual mentally represents a task in order to process and work on it.

Simon (1972), and commonly involved the subject simultaneously verbalising their thoughts when confronted with a patient case. The information processing model involves two systems, working memory (also termed short-term memory) and long-term memory, which work together to allow learning, comprehension and responses to experiences (Simon 1978). The verbalisation is considered to represent the real-time thought processes of the participant, while engaging in and solving a task, and is considered to present the consciously accessible contents of the short- and long-term memory (Fowler 1997). The main strengths of the think-aloud protocol is in its ability to link the thinking processes with current perceptions and actions, allowing the researcher to explore information within the working memory, which functions as the processing division between short-term and long-term memory (Lundgren-Laine and Salanterä 2010). Additionally, by not interrupting participants during their 'thinking-aloud' about a particular case, it attempts to mirror, as closely as possible, the natural practice setting. However, one major drawback of this approach is that subjects are unlikely to self-report all of their thought as the speed of the cognitive processes is faster than can be articulated (Fowler 1997), particularly when clinical reasoning becomes more automatic as is the case with experienced practitioners (Groen and Patel 1985).

The second method utilising verbal reports, called 'retrospective protocols' (also termed 'debriefing'), involves collecting verbal reports after the patient encounter (Unsworth 2008). These verbalisations are likely to refer to the contents of both the long- and short-term memory (Newell et al. 1972). One limitation of the retrospective protocol method is the possibility that subjects will (intentionally or unintentionally) 'pre-consider' and reflect on their reasoning, thus providing a 'rehearsed' or distorted verbal report in accordance with what they think the researcher might like to hear (Fowler 1997). Arocha and Patel (2008) argue that retrospective protocols are better placed to characterise processes that are not dependent on the concurrent presentation of stimulus material, and may be combined with think-aloud methods, for effectively investigating cognitive and metacognitive processes associated with reasoning, such as comprehension and application of knowledge (Arocha and Patel 2008). Conducting the debriefing directly after the observation, and the researcher thoroughly reassuring the practitioner that there are no right or wrong answers, aim to reduce these limitations (Unsworth 2008).

Unlike the precognitive era of behaviourism, cognitive science research into clinical reasoning allowed for construction of ‘mental’ concepts and processes (Arocha and Patel 2008). Problem-solving analysis and decision analysis are two distinct research divisions that have emerged from the cognitive science paradigm (Schwartz and Elstein 2008). Set firmly within the medical literature, research into decision analysis used statistical models, and mathematical methods, such as Bayes’ Theorem¹⁵ to investigate decision-making under conditions of uncertainty (Schwartz and Elstein 2008). The ‘probability’ of a diagnosis, represented by a hypothesis, is calculated by manipulating complex probabilities using mathematical calculations (McGuire 1985). However, as Norman (2005) points out, the key problem with decision analysis and problem-solving research, is that it tells us how practitioners *should* reason rather than how they *do* reason. A major consequence of the cognitive research studies carried out during the 1970s was the emergence of two strategies of diagnostic clinical reasoning; ‘hypothetico-deductive reasoning’ and ‘pattern recognition’, which are discussed below.

4.4.2.1 Hypothetico-deductive reasoning

In the late 1970s, researchers attempted to gain a direct understanding of clinical problem solving within medicine. Using students of different educational levels (Neufeld et al. 1981) or a combination of students and physicians (Barrows et al. 1982), these studies observed subjects’ interaction with patients, and students gave a real time verbal description, either during the interaction (‘think aloud’) or alternatively after the patient encounter, during a viewing of a video-recording of the interactions, called ‘stimulated recall’. Drawing on previous research comparing the performance of master and novice chess players (Groot 1965; Chase and Simon 1973), Elstein and colleagues (1978) took an observational approach to medical problem solving, by investigating how ‘expert’¹⁶ practitioners solve clinical problems. The results of these studies showed that expert practitioners began to formulate multiple hypotheses early on in the patient encounter and that the diagnostic accuracy was closely related to previous exposure and experience of specific types of patient cases. The key finding of Elstein’s study was that clinical reasoning involved four steps: 1) data or ‘cue’ acquisition (initial observation, case history, examination findings); 2) hypothesis formation; 3) interpretation of the

¹⁵ Bayes theorem is a normative rule for diagnostic reasoning, using a formal mathematical rule to calculate diagnostic probability as new diagnostic information is obtained (Schwartz and Elstein 2008).

¹⁶ As shall be discussed in Section 4.6.8 the concept of the ‘expert’ is problematic, and researchers currently have a limited understanding of the nature of expertise in healthcare.

data ('weighing of evidence'); followed by 4) a search to prove (or disprove) the evidence (hypothesis evaluation) (Elstein et al. 1978). What emerged from Elstein's work was an early general model of clinical problem-solving, termed the 'hypothetico-deductive' method (Norman 2005). Whilst clinical problem-solving had been the main focus of clinical reasoning research in medicine, limitations of adopting a predominantly diagnosis-focused approach have been raised (McGuire 1985), in particular the tendency of practitioners to forget the patient in the process of attempting to accurately find the 'correct' and 'true' diagnosis. Nevertheless, researchers utilising verbal reports were among the first to use qualitative data operating within the empirico-analytical paradigm. These studies aimed to describe specific situations in detail rather than measuring the overall 'behaviour' of clinician-patient interaction (Arocha and Patel 2008).

The early cognitive studies showed that during the first few minutes or even seconds of the patient encounter, practitioners generated one or more hypotheses, which "popped into the clinicians head" (Norman 2009, p.43). Elstein and associates' research implies that hypotheses are retrieved from long-term memories, which are often goal orientated, and are used to create a 'problem space' (Elstein et al. 1978). These researchers observed that students and clinicians were able to generate a limited number of hypotheses (between three and seven) during the initial patient encounter, directing further data collection (Elstein et al. 1978). It may be that this strategy reduces the likelihood of overloading the practitioner with excessive data, and grouping the data into 'chunks' allows for the efficient processing and organisation of data and subsequent interpretation (Larkin et al. 1980).

4.4.2.2 Pattern recognition

In the 1980s, medical researchers began focusing on the different ways in which expert physicians organised and structured their knowledge. Groen and Patel (1985) identified that during non-problematic situations, experts did not rely solely on hypothetico-deductive reasoning, but rather used direct retrieval of information from a well-developed knowledge base to support the analysis of presenting data and subsequent hypothesis generation, termed 'pattern recognition'. Pattern recognition, also known as 'forward reasoning', contrasts with the cyclical process of hypothesis generation and testing (also referred to as 'backward reasoning'). Patel and Groen (1985) proposed that

novices tend to use processes such as means-ends analysis and generate-and-test methods that involve slower backward reasoning. Barrows and Feltovich (1987) posited that practitioners use hypothetico-deductive reasoning as a means to store new clinical patterns in their memory which may be relied upon when a similar clinical situation arises.

However, pattern recognition can be highly prone to error, especially when used by the novice or unreflective practitioner, with inadequate domain knowledge (Higgs and Jones 2008). Furthermore, because of its inductive nature, there are no built-in checks of authenticity, meaning that faulty knowledge, personal bias and the clinician having a 'favourite' diagnosis can lead to errors in clinical reasoning (Jones et al. 2008). The strength of pattern recognition, in that it enables clinicians to quickly access data from previous clinical scenarios, is also one of its main weaknesses. Practitioners may tend to 'force a diagnosis' by making the examination findings more consistent with a typical case presentation, placing a too great an emphasis on positive findings and too eagerly discount negative or conflicting findings (Schwartz and Elstein 2008). Rivett and Jones agree that confirmation bias may occur "when clinical cues are selectively chosen or interpreted as validating a favoured hypothesis" (Rivett and Jones 2004, p.408). Specific hypotheses could be favoured by a practitioner, as a result of a range of factors which are specific to that particular individual. For example, their depth and breadth of clinical experience, skill-set and their own personal lens or 'frame of reference' (Schön 1983), meaning they may be drawn to particular cues, and consider them more significant than others.

Further cognitive research has suggested that when confronted with a complex or unfamiliar problem, expert clinicians resort back to hypothetico-deductive reasoning (Barrows and Feltovich 1987; Schmidt et al. 1990; Patel and Groen 1991). This element of clinical expertise requires the practitioner to be aware of their own limitations and biases in practice, as will be discussed later in the chapter. Jones and colleagues highlight how to avoid the potential hazards of pattern recognition and state that "learning and being able to recognise common clinical patterns and their variations while minimising the risks and limitations of pattern recognition requires metacognition" (Jones et al. 2008, p.250). The ability of the practitioner to self-reflect and 'know what they know and what they don't know' affords them the ability to

monitor their data collection and is thought to be a vital part of expert practice in physiotherapy (Jensen et al. 2000; Jones et al. 2008). While efficient, forward reasoning is error prone and reducing the hazards associated with pattern recognition requires a strong domain specific knowledge and metacognitive processes.

4.4.3 The 1990s: The era of mental representations

Researchers have struggled to demonstrate a relationship between expertise in medicine and performance during memory recall. This is in contrast to activities such as chess where expertise is mostly as a result of a greater specific knowledge base (Norman 2009). Norman (2005) suggests the reason for this is that during a game of chess, success depends on a player keeping track of every chess piece, whereas there is little benefit for a physician in remembering superfluous amounts of patient data. Research into hypothesis generation also failed to distinguish between novice and expert physicians (Elstein et al. 1978; Elstein 2009). Intent on uncovering the nature of clinical expertise, in the 1990s, clinical reasoning research began to focus on the structure or *organisation* of knowledge that an expert possessed, and researchers moved from the ‘age of memory’ to the age of mental representations’ (Norman 2005).

In 1990, Schmidt and colleagues published an influential paper, proposing a four-stage model for developing clinical reasoning expertise, which they termed ‘script theory’ (Schmidt et al. 1990). Schmidt argued that experts do not work at some ‘deeper’ level of processing, but rather that clinical reasoning expertise is associated with the availability of knowledge representations in diverse forms, developed from both experience and formal learning (Schmidt et al. 1990). Their theory posited that practitioners travel through four stages when structuring a knowledge base, which can be described as follows. During the first two stages, novices start by developing causal networks which they use to explain the features of disease in terms of pathophysiology, and progress to a stage where biomedical knowledge has been *encapsulated* into clinical knowledge (Boshuizen and Schmidt 2008). The third stage involves the translation from a network organisation of knowledge to a narrative list-like structure termed ‘illness scripts’ (Schmidt et al. 1990; Boshuizen and Schmidt 2008). Initially described by Feltovich and Barrows (1984) and later by Schmidt et al. (1990), illness scripts have three components: 1) *enabling conditions* (patient contextual factors that influence the likelihood that they may have a specific disease); 2) *the fault*, that is, the real

manifestations of the illness, characterised by the use of biomedical terms; and 3) *the consequence*, that is, the different complaints, signs and symptoms to which a specific fault might lead (Custers et al. 1996). Unlike the knowledge networks of novices, encapsulated illness scripts are recalled ('activated') as a whole, and no searching within the script is required as other elements within the script are activated immediately and automatically (Boshuizen and Schmidt 2008). In a routine case, problem solving involves script searching, script selection and script verification, increasing the efficiency of the reasoning process (Schmidt et al. 1990). The fourth and final stage of expert knowledge development asserts that memories of previous presentations are retained in a physician's memory as an individual 'instance script'. Instance scripts were exemplar-based patterns, linked to past memory of experiences with particular patients. This stage proposed that the problem solving processes of experienced practitioners was based on the similarity of new cases to a patient previously encountered. Practitioners drew upon details including the presenting signs and symptoms, and the way in which a patients' problem was previously managed, rather than drawing on pathophysiological knowledge or more general descriptions of clinical conditions and syndromes (Schmidt et al. 1990). The researchers of this 'script theory' propose that "as long as new information matches an active illness script, no active reasoning is required" (Boshuizen and Schmidt 2008, p.116). In support of this notion, Glaser and Chi (1988) explain that experts are individuals that possess highly organised and integrated structures of knowledge, giving them the ability to perceive meaningful patterns.

However, there are a number of criticisms of this model. Jones and Rivett argue that the concept of illness scripts "probably oversimplifies the complexity of a clinician's organised knowledge" (Jones and Rivett 2004, p.12). These authors assert that every characteristic of a patient's presentation (enabling conditions, fault, consequences of the fault), lie within a continuum, which may or may not be relevant, and practitioners must possess a broad understanding of the determinants of health and recovery as well as 'sifting out' the most pertinent clinical features (Jones and Rivett 2004). Further challenges come from Patel, Kauffman and colleagues (Patel and Kauffman 2000a; Kauffman et al. 2008), who are sceptical and argue against the concept of knowledge encapsulation proposed by Schmidt et al. (1990). Kauffman and colleagues claim that "the notion of knowledge encapsulation represents an idealised perspective of the

integration of basic sciences in clinical knowledge” (Kauffman et al. 2008, p.146). This argument maintains that rather than an integrated world of biomedical sciences, subsumed under clinical knowledge, clinical knowledge and biomedical sciences are two distinct worlds, and play separate roles in the reasoning process (Kauffman et al. 2008). Kauffman et al. explain that while the script theory may account for the reasoning through of non-complex cases, experts will have to generate new causal models, based on the biomedical sciences and pathophysiology for presentations which have not been previously encountered (i.e. when encapsulated knowledge is not available) (Kauffman et al. 2008).

Some research supports the view held by Patel and colleagues, suggesting that biomedical knowledge is the primary and essential source of knowledge for diagnostic classification in medicine (Norman 2000; Woods et al. 2005), while other research supports knowledge encapsulations and case representation (Rikers et al. 2005). Interestingly, when examining the cognitive-based research into clinical reasoning, there is almost no discussion or acknowledgement of other forms of knowledge (for example, non-propositional knowledge), and the role they may play in reasoning. Most cognitive researchers appear to make a narrow separation of knowledge being either clinical/encapsulated or biomedical/non-encapsulated. This may be in part due to the diagnosis-centred approach of the research, which essentially looks at the ability of the practitioner to ‘label’ a particular patient presentation with a diagnosis, rather than explore the processes of clinical reasoning during on-going patient care. Another limitation may be due to the fundamental views that cognitivism holds. Owing to the basic assumption of cognitivism, that the mind can be viewed as operating like a computer, a major drawback of cognitive research into clinical reasoning is that only knowledge that can be sufficiently verbalised (i.e. propositional knowledge) can be recognised (Larsen et al. 2008), meaning that cognitivism only provides a superficial and one-dimensional understanding of clinical reasoning. Therefore, concepts such as artistry, wisdom and tacit knowledge are essentially undetectable to cognitive researchers, and require alternative research approaches to suitably explore.

In summary, while the model of knowledge acquisition provided by Schmidt and co-workers (Schmidt et al. 1990; Schmidt and Boshuizen 1993) provides a useful framework for the development of diagnostic expertise in medicine it may have limited

transferability to osteopathic practice (i.e. just the diagnostic process). If practitioners are to embrace patient-centred reasoning and practice, then clinical reasoning must include more than just efficient diagnostic scripts, it must include ‘treatment scripts’ and ‘patient scripts’ in order to recognise the complexities of practice, ongoing care and increased contact time with patients.

4.4.4 Interpretive approaches

In response to the limitations of behaviourist and cognitive approaches, such as those discussed above, recent clinical reasoning research has operated within the interpretive research paradigm, using qualitative methodologies (Arocha and Patel 2008; Thomson et al. 2011a). Researchers using interpretive approaches emphasise clinical reasoning in the natural context of clinical practice, and interpretivism maintains that “humans behave in the way that they do in part because of their environment” (Willis 2007, p.6). As discussed, the history of clinical reasoning research, up until the mid 1980s, was predominantly occupied by the medical profession. However, other healthcare professions, wanting to gain a more comprehensive understanding of their professional practice situated their research in the interpretive paradigm. Interpretive approaches provided researchers with a way to generate knowledge of the complex and often discrete aspects of their discipline, within the context of ‘real life’ clinical practice (Arocha and Patel 2008). For example, occupational therapists using ethnography (Gillette and Mattingly 1987), physiotherapists using grounded theory (Jensen et al. 2000; Edwards et al. 2004a) and nurses using phenomenology (Benner et al. 1992).

Researchers operating within the interpretive paradigm frequently use observation of the patient-practitioner encounter, or interviews with practitioners to collect data, as these methods are able to facilitate a form of *naturalistic* enquiry (Lincoln and Guba 1985) which generates ‘rich’, contextual data on specific aspects of practice. Observation methods usually involve observing practitioners either directly in person or indirectly via the use of a video camera (Unsworth 2008). However, the awareness of a research participant under study poses problems for researchers using interviews and observation as a method of generating research data. During observation, practitioners or patients may act in a way they may not normally act, thereby confounding the collected data (Unsworth 2008). Alternatively, during interviews participants may provide answers to questions which they think the researcher ‘wants’ to hear or which may show them and

their practice in a positive light (Unsworth 2008). This ‘reactive’ or ‘guinea pig’ effect (Webb et al. 1966) will be present to some degree in all naturalistic research, utilising interview and observation methods, but researchers can take steps to minimise these effects and help ensure that credible data can be generated (for example, Unsworth 2008). For example, during interviews researchers should endeavour to develop a trusting and open researcher-participant relationship, as well as monitoring the interviewer effect so that they can delve deeply into participants responses (Kvale 2007). Researchers could also combine direct clinical observation with video-recording, and use the recording as a reflective tool in combination with interviews after the clinical session (Haw and Hadfield 2011). This would strengthen the credibility of the research data generated, by facilitating participants to reflect on their practice and reasoning thereby helping to ensure that their knowledge (expressed through answers to interview questions) is closely tied with their actions viewed on the video recording (Haw and Hadfield 2011).

In summary, one of the main aims of interpretive clinical reasoning research is to ‘capture and explore’ practitioners clinical reasoning processes and the knowledge they use to inform their clinical decisions and actions. This highlights that knowledge and clinical reasoning are inextricably linked, and for this reason clinical reasoning has been referred to as a ‘vehicle’ for knowledge development and acquisition (Higgs et al. 2004c, p.196). The next section critically explores knowledge and examines its relationship with clinical reasoning and practice.

4.5 Knowledge

Knowledge as a concept needs to be defined, however how an individual views and defines knowledge is intricately linked to their worldview and ontological perspective (Richardson et al. 2004). From the interpretivist view of this research study, knowledge is considered to be “associated with and embedded in the world of meanings and of human interactions and being” (Higgs et al. 2008, p.156). Knowledge comprises constructions from meaning, and is set within the context of the particular situation (Higgs and Jones 1995). Scholars throughout the years have attempted to identify and classify the different forms of knowledge associated with professional practice. Table 4.1 overleaf, illustrates the broad range of knowledge types associated with practice.

aesthetic	espoused theories	moral	relational
artistic	ethical	personal	scientific
assumptions	expectations	practical	situational
attitudes	experiential	presentational	tacit
beliefs	heuristic	procedural	technical
emancipatory	impressions	process	theoretical
embodied	intuitive	professional craft	theories-in-use
emotional	knowing in practice	propositional	values

Table 4.1 The wide range of knowledge associated with practice (Polanyi 1967; Argyris and Schön 1974; Benner 1984; Schön 1987; Eraut 1994; Fish 1998; Fish and Coles 1998; Beeston and Higgs 2001; Higgs et al. 2004a; Higgs et al. 2004c; Todres 2008, 2011)

An early and influential discussion of knowledge in relation to practice is provided by Gilbert Ryle (1949), who posits that practical knowledge incorporates the two categories of *knowing how* and *knowing that* (Gustavsson 2004). Ryle considered that *knowing how* referred to knowledge which enables the performance of an action or a skill. The term *knowing that* referred to the knowledge of how things are done (Gustavsson 2004). From their perspective of healthcare practice, Higgs and co-workers have aligned Ryle’s notions with their own classification of propositional knowledge (*knowing that*), and non-propositional knowledge (*knowing how*) (Higgs et al. 2008). The relationship between knowledge, reasoning and practice is a complicated one, and critically evaluating the knowledge used in practice is now a requirement across the healthcare professions. This complex relationship is further explored in the next section by critically examining the different perspectives of knowledge.

4.5.1 Interrelationship of knowledge and clinical reasoning

It has been recognised that knowledge and clinical reasoning are mutually dependent. Jones (1995) maintains that knowledge is perhaps the most important variable affecting clinical reasoning. In support of this view, Higgs and Jones comment that a “strong discipline-specific knowledge base, comprising propositional knowledge and non-

propositional knowledge, is necessary for sound and responsible clinical reasoning” (Higgs and Jones 2008, p.5). Professional practice incorporates a spectrum of various types of knowledge, and in that regard, Higgs and associates describe clinical reasoning as “a bridge between practice and knowledge” (Higgs et al. 2004c, p.181). Developing an understanding of the linkages between knowledge, reasoning and action is fundamental to clinical practice, and is thought to be crucial for the professional development of osteopathy (Thomson et al. 2011a). This study aims to generate knowledge of these fundamental aspects of osteopathic practice.

Artists and professionals operate using knowledge which is unexplainable to others. Polanyi (1967) compares knowledge which is explicit, teachable, and can be verbalised to knowledge which cannot, termed *tacit* knowledge. Polanyi considers that much of human knowledge is tacit and famously posits that “we know more than we can tell” (Polanyi 1967, p.4). Tacit knowledge is that aspect of human action, skill, performance or practice which, for the most part cannot be easily explained and articulated. Willis states that “if exemplary practice is, in part, determined by tacit knowledge that is not translatable to explicit rules, then the teaching of rules gets at only part of what makes a great physician, great artist, or a great scientist” (Willis 2007, p.120). This constitutes a major challenge in clinical reasoning research, whereby researchers aim to make the invisible relationship between knowledge, practice and reasoning more visible. Higgs and Titchen appear to reject Polanyi’s notion of tacit knowledge, and consider that labelling such areas of practice as tacit or intuitive is a “lazy or unconfident excuse” for not addressing the challenge of recognising and appraising practice knowledge (Higgs and Titchen 2001b, p.530). Higgs and co-workers (2004c) argue that it is down to practitioners (and researchers) to develop the skills and methods necessary to describe, measure and investigate knowledge and suggest that to describe such knowledge as ‘tacit’ is a loose and inaccurate use of the term.

I agree with Higgs and co-workers, and consider that much of clinical practice can be known, expressed, and made *more* explicit through appropriate research methodologies. This view lies behind the main purpose of this study, which is to explore and explicate the clinical reasoning and practice approaches of experienced osteopaths. Whilst the complexity of an experienced professional’s knowledge may never be made completely explicit, particularly if using the tools of empirical science, qualitative research during

the last twenty-five years has identified some aspects of clinical reasoning and knowledge organisation which had previously remained hidden and not conveyable to others, and some of which are discussed in Section 4.6 later on in this chapter.

With respect to clinical reasoning, Higgs and Titchen (1995) have categorised knowledge in order to distinguish and effectively communicate the type and origin of the knowledge obtained. The major components of this framework include propositional, non-propositional, personal and practice knowledge. The framework is used to discuss the major knowledge forms below.

4.5.1.1 Propositional knowledge

Knowledge which is composed of explicit ‘facts’, and can be verified by research and readily articulated, has been termed *propositional knowledge* (Eraut 1994; Higgs et al. 2004a). Propositional knowledge is often derived from research, books and other scholarly activity, which may be explained and ratified by others (Higgs et al. 2008). Eraut asserts that this type of knowledge is “subject to quality control by editors, peer review and debate, and given status by incorporation into educational programmes, examinations and courses” (Eraut 2000, p.114). Interestingly, propositional knowledge does not appear to be the most significant form of knowledge in respect to clinical reasoning and expertise (Mattingly and Fleming 1994a; Jensen et al. 2000; Unsworth 2001), even though the teaching curricula of many healthcare professions place a major emphasis on it in healthcare education (Kauffman et al. 2008). In Jensen and colleagues’ grounded theory exploration of the practice of physical therapists, the peer-designated experts felt that knowledge gained from listening to their patients during their practice was one of the most important sources and forms of knowledge (Jensen et al. 2000). These researchers found that “expert clinicians were much more focused on the knowledge they had gained learning from patients in their practice than on knowledge gained from traditional academic content areas such as anatomy, biomechanics, or pathology” (Jensen et al. 2000, p.27). Research has identified similar traits in expert occupational therapists, who were observed to frequently draw on past practice-based experience to modify the management of their patients (Unsworth 2001).

4.5.1.2 Non-propositional knowledge

Higgs and Titchen (1995) separate non-propositional knowledge into two divisions; *professional craft knowledge* and *personal knowledge*. According to these authors, professional craft knowledge is distinguished from propositional knowledge, in that it is generated from practice experience, such as knowledge gained from specific patients and clinical situations (Higgs and Titchen 1995). This type of knowledge is deeply embedded in practice and is often not available for immediate articulation (Benner 1984). From the perspective of nursing, Rycroft-Malone and colleagues claim that “non-propositional knowledge has the potential to become propositional knowledge once it has been articulated by individual practitioners, then debated, contested and verified through wider communities of practice in the critical social science tradition of theory generation” (Rycroft-Malone et al. 2004, p.83). This view appears to be consistent with Higgs and Titchen (2001b), who consider that many dimensions of non-propositional knowledge can be expressed using the appropriate research methods such as through the use of creative arts media, such as painting, poetry and dance.

4.5.1.3 Personal knowledge

Personal knowledge is formed from the knowledge held by the community, culture or discipline in which the ‘knower’ lives and practices (Higgs et al. 2004a). Personal knowledge may be regarded as the “cognitive resources which a person brings to a situation that enables them to think and perform” (Eraut 2000, p.114). Utilising personal knowledge in clinical reasoning would include “an explicit understanding of the values and beliefs one holds, outside the codified professional values, and the ability to evaluate these in light of new experiences and situations” (Edwards and Delany 2008, p.288). Therefore, personal knowledge may be regarded as a ‘lens of reference’, having the ability to influence the way in which practitioners interpret new propositional knowledge, such as that from scientific research. Practitioners’ personal lens of reference will impact the way propositional knowledge, such as research evidence, is utilised in clinical practice and reasoning, therefore impacting their clinical action. A good example of how personal knowledge may influence practice can be found in research exploring the attitudes, beliefs and professional identities of musculoskeletal practitioners (Evans 2007). Using a grounded theory study, Evans (2007) aimed to understand what influenced the practice behaviour of individual manual therapists (including chiropractors, osteopaths and physiotherapists) when caring for patients with

low back pain. The findings suggested that personal knowledge in the shape of personal experiences, interests, religious beliefs and values (such as altruism and duty of care), appeared to significantly influence practitioners' clinical behaviour and their beliefs about their contribution and role as healthcare professionals in managing patients with low back pain. This example illustrates the need for practitioners to have a well-developed self-awareness and understanding of their personal knowledge, to enable them to manage the interpersonal, ethical and emotional aspects of human interaction and importantly, the complex clinical decisions which face them in professional practice (Higgs and Titchen 2000).

4.5.1.4 Practice knowledge

The different forms of knowledge which are *applied to*, and *developed from* practice intertwine to form a complex matrix termed 'practice knowledge'. In an attempt to capture the different categories of knowledge which form the matrix of practice knowledge (such as those proposed by Ryle and Polanyi), Higgs and colleagues (Higgs and Titchen 2001b; Higgs et al. 2004c) put forward a model of practice knowledge to describe the array of knowledge types that practitioners possess. These include:

- propositional knowledge (which describes and predicts)
- procedural knowledge (which enables behaviour)
- theoretical knowledge (which explains and interprets)
- emancipatory knowledge (which empowers people)

In contrast to the view of Polanyi (1967), Higgs and colleagues (2004c) emphasise that any one category of knowledge may be translated from one category to another. For example, knowledge derived from empirical research (propositional knowledge) may be applied to clinical practice, and subsequently becomes part of the personal experience of the individual (non-propositional knowledge). The advent of evidence-based practice has placed demands on healthcare professions to assure stakeholders of scrupulous, 'scientific' practice. This movement has emphasised propositional knowledge, giving it a seemingly greater importance, and a wealth of research employing the scientific method (to generate propositional knowledge) has followed. However, in 'real life' practice there lays a dynamic relationship between the different forms of knowledge

(Rycroft-Malone et al. 2004). In order for practice to be evidence-based, practitioners should mesh together propositional and non-propositional forms of knowledge, and as Sackett explains the, “clinical evidence can inform, but never replace, individual clinical expertise” (Sackett 2000, p.73). Higgs and co-workers’ model of practice knowledge described above, recognises the dynamics and interconnectedness of the different forms of knowledge related to practice. The responsibility lays with the practitioner to use and bring together these different knowledge sources, in a particular way, for a particular patient, in a particular situation.

4.5.2 Metacognition

Metacognition may be considered as “thinking about your thinking and the factors that limit it” (Jones and Rivett 2004, p.9). More specifically, the term describes the ways in which practitioners monitor their thinking and actively reflect on aspects of their practice such as, data collection during clinical examination, clinical reasoning and the implementation of subsequent treatment and management strategies (Thomson et al. 2011a). Metacognition is essentially a reflective moment in practice (Eraut 2002), and permits practitioners to scrutinise their knowledge and reasoning, allowing them to consider aspects of the patient’s presentation that may not fit with existing patterns or scripts. Importantly, this ensures that practitioners recognise clinical variations, which not only facilitates a more effective and safe delivery of care, but also serves to widen their knowledge base, in particular, their professional craft knowledge¹⁷ (Jones 1992; Higgs et al. 2004a). Flavell defines metacognitive experiences as “any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise” (Flavell 1979, p.906). Metacognition involves thinking at a higher level than cognition, and is well recognised as an attribute of expertise (Eraut 1994, 1995), and more specifically clinical expertise in physiotherapy (Embrey et al. 1996; Jensen et al. 2000). Furthermore, some consider metacognition to be the link that allows practitioners to implicitly learn from the ongoing experiences and situations that occur in clinical practice (Eraut 2000, 2004). Experimental evidence supports the view that high metacognitive skills are associated with enhanced performances in problem solving

¹⁷ *Professional craft knowledge* is knowledge embedded in practice which is often considered to be tacit and unarticulated and could include all of the knowledge types illustrated in Table 4.1. Professional craft knowledge underpins fluent day-to-day practice, is multi-faceted and includes experiential knowledge, ethical/moral knowledge, embodied knowledge, aesthetical knowledge and practical knowledge (Titchen and Erssner 2001).

(Swanson 1990) and the importance of incorporating metacognition into clinical reasoning education has been recognised (Terry and Higgs 1993).

Donald Schön (1983, 1987) distinguishes between two types of reflection, and explains that *reflection-in-action* may occur during a patient encounter, pausing to think about your practice up to that moment. Reflection-in-action allows practitioners to make adjustments to their examination and treatment plan, picking up on subtle cues from the patient during the encounter. This form of metacognitive process is used during the ‘hot’ action of practice, when practitioners need to process a vast amount of information and knowledge, quickly and under pressure (Higgs and Titchen 2001b). Schön proposes that reflection may also occur after the patient encounter, termed *reflection-about-action*, allowing the practitioner to appraise the previous encounter, and consider how they approached the case. This form of ‘cool’ reflection is thought to be more deliberate and may involve a critical review from peers as well as scrutiny from the practitioner themselves (Higgs and Titchen 2001b). Some authors have criticised Schön's concepts of reflection (Eraut 1995; van Manen 1995; Eraut 2002). Van Manen (1995) questions how reflective, reflection-in-action can actually be. He argues that during reflection-in-action “reflection is only limited and restricted to the task at hand rather than taking into consideration the full range of possibilities of interpreting what is going on, understanding the various possible modalities of meaning, considering alternative courses of action, weighing their various consequences, deciding on what must be done, and then actually doing it” (van Manen 1995, p.35). Eraut (2002) is also highly critical of Schön’s notion of reflection occurring ‘in-action’, arguing that while there may be momentary pauses during ‘hot action’, these momentary pauses are not reflective but rather metacognitive actions, to check automatic and intuitive processes (Eraut 2002). These criticisms centre on the dimension of time, and the ‘busyness’ of practice, which in actuality, will not allow a sufficient depth of reflection to alter ‘real-time’ practice. If the term reflection is accepted to represent different depths of purposeful thought, then Schön’s notion of reflection-in-action remains a useful concept. Regardless, without reflection practitioners are at risk of continuing with the same routine practice, not learning how they may enhance and develop their practice and optimise patient care and outcomes.

Metacognitive and reflective processes are fundamental to facilitating the development of decision-making, so that practitioners can negotiate the complex situations encountered in professional practice. The findings from this research study could help to provide an understanding of the role metacognition plays in the clinical practice of osteopaths and how it may influence clinical decision-making.

4.6 Models of clinical reasoning

This section critically evaluates the major models of clinical reasoning which have been developed both theoretically and from research conducted by a wide range of healthcare professions.

4.6.1 Clinical reasoning in manual therapy and physiotherapy

It took almost three decades after the medical profession began exploring medical problem solving for researchers to explore the clinical reasoning processes in physiotherapy¹⁸. Strongly influenced by the experiments of Elstein and co-workers (Elstein et al. 1978), pioneering research by Payton (1985) aimed to examine how a selected group of peer nominated ‘expert’ physiotherapists examined patients, clinically problem-solved and made decisions regarding treatment plans. Through audio-taping and observing encounters with a new, previously unseen patient, and subsequent interviews with the physiotherapist, Payton was able to describe the clinical reasoning of physiotherapists, and subsequently compare the results with earlier work within the medical profession (Elstein et al. 1978; Barrows 1980). From the findings, Payton was able to conclude that the physiotherapists in his study employed a hypothetico-deductive process, which was essentially the same process, albeit with different terminology, as that used by medical physicians. Payton (1985) went on to recommend that as the clinical reasoning processes in both medicine and physiotherapy were the same, then the hypothetico-deductive process should be explicitly taught to student physiotherapists, and could be easily implemented into the physiotherapy curriculum using previous teaching and assessment methods described in medical education research (Barrows and Tamblyn 1980). Jones supports Payton’s view, and goes further

¹⁸ The terms ‘physiotherapist’ and ‘physical therapist’ are considered synonymous, with the latter term commonly used in the USA, and the former term more commonly used in the UK. In this thesis the terms will be used interchangeably.

by suggesting that the hypothetico-deductive model which had emerged from the medical studies “could be universally applied by clinicians at all levels of expertise” (Jones 1992, p.44). As a result, Jones (1992) adapted the medical clinical reasoning model developed by Barrows and Tamblyns (1980), for physiotherapy practice. In his revised model, Jones emphasised the ongoing and cyclical nature of data collection (through examination and assessment) with treatment interventions. Jones’ (1992) model of clinical reasoning is illustrated in Figure 4.1 below.



Figure 4.1 Clinical reasoning model for physiotherapy proposed by Jones (1992)

While the hypothesis-orientated approach may be applied universally for matters of problem solving, Jones argues that in both manual therapy and physiotherapy “some patient problems, however, are unsolvable” (Jones 1992, p.44), alluding to the ambiguity of common manual therapy conditions such as chronic low back pain where universal cause-effect mechanisms remain elusive and multiple treatment approaches are recommended (Bogduk 2004). To account for this, Jones proposes that clinical reasoning in manual and physical therapy should aim to include patient examination and

management as well as the initial diagnosis (Jones 1992). An important idea from Jones' theoretical model is that hypothesis generation and testing in manual therapy must be cyclical and continue throughout the patient care, over multiple treatment sessions. This emphasised that clinical reasoning in manual therapy encompassed more than just diagnosis formulation, and must also incorporate the ongoing patient management (Jones 1992). The key difference from the medical model of hypothesis generation and testing is that the initial hypothesis would be continually modified both within the treatment sessions (via examination, case history, and treatment) and from between treatment sessions. This difference represents the dynamic nature of physiotherapy practice and reflects the emphasis on treatment and management as well as diagnosis.

However, a main criticism with the model proposed by Jones (1992), is that it is essentially theoretical, and adapted to physiotherapy from previous medical research. Therefore the model has limited credibility with regards to how it reflects real-world physiotherapy practice. Furthermore, whilst the model expands upon the diagnostic-focus of previous medical models of clinical reasoning (such as emphasising the cyclical nature of data collection and the inclusion of treatment), it does not provided an understanding of how practitioners interact with patients to structure treatment and management approaches, and the role that patients play in this process, highlighting a further limitation with the model.

The theoretical model proposed by Jones (1992), was subsequently supported by Doody and McAteer (2002) when they investigated the clinical reasoning of two groups of expert and novice physiotherapists in an outpatient hospital setting in Ireland. This qualitative study was one of the first to explore the clinical reasoning of both the assessment and treatment aspects of a physiotherapy session. The study investigated 10 experienced practitioners and 10 undergraduate student-practitioners as they evaluated and treated a previously unseen patient. The physiotherapists were observed and audio-taped during the patient encounter with the researchers collecting data by means of retrospective verbal reports. The findings of the study lend support to the work by Payton (1985), in that all participants demonstrated hypothetico-deductive reasoning, while experts included pattern recognition in their reasoning, which is consistent with earlier research from the medical profession (Groen and Patel 1985). Importantly,

Doody and McAteers' work suggested that there was a very close relationship between hypothesis generation and ensuing evaluation and treatment, and that practitioners used aspects of their manual therapy treatment as a means of testing and refining further hypotheses, and provided an insight into the ongoing clinical reasoning which takes place throughout the clinical session. Further, the findings generated by Doody and McAteer (2002) concur with and therefore go some way towards validating the theoretical model of clinical reasoning proposed by Jones (1992). The work of Doody and McAteer (2002) is valuable in validating a previously proposed model, however more comprehensive and patient-focused models of clinical reasoning in physiotherapy have been suggested, such as the collaborative model by Edwards (1995) or the integrated client-centred model by Higgs and Jones (2000), and are discussed in the following sections. Furthermore, the findings of Doody and McAteers' (2002) study were generated from physiotherapists working in an outpatient hospital setting in Ireland, and further research, such as this current study, is necessary to establish the transferability of the findings, to osteopaths practicing in the private sector in the UK.

4.6.2 Hypothesis categories

As discussed earlier, transferring the medical model of clinical reasoning seamlessly into manual therapy may be problematic due to its central focus on diagnosis formation. Jones argues that in manual therapy "therapists with different training will ask different questions and perform different tests depending on the significance they give to the subjective and physical information available from the patient" (Jones 1992, p.46). Jones seems to suggest that the different philosophies of the manual therapy professions (for example, osteopathy, physiotherapy and chiropractic) will result in a variation of clinical reasoning and practice approaches. In respect to osteopathy, while practitioners treat musculoskeletal disabilities using manual therapy technique, osteopaths are said to operate with a unique philosophical underpinning (Sammut and Searle-Barnes 1998). It therefore makes sense that osteopaths may collect clinical data and interpret clinical findings quite differently from either physiotherapists or medical physicians. To combat this, Jones (1992) put forward the notion of *hypothesis categories*, to describe the way that practitioners, regardless of manual therapy approach or philosophy, obtain information during the patient encounter and effectively organise knowledge. The notion of hypothesis categories reflects the increased awareness of the importance in understanding the patient's perspective during the hypothetico-deductive process. It was

a departure from the problem-solving models which had emerged from medical research and went beyond disease-centred diagnostic reasoning. The model of hypothesis categories proposed by Jones (1992) drew on a range of areas related to manual therapy, such as the pain sciences, biopsychosocial factors and cooperative decision-making, all of which ‘fed into’ the reasoning process. Table 4.2 below shows the hypothesis categories as summarised by Jones et al (2008).

Hypothesis categories
<i>Activity capability/restriction: abilities and difficulties an individual may have in executing activities</i>
<i>Participation capability/restriction: abilities and problems an individual may have in involvement in life situations</i>
<i>Patients’ perspectives on their experience</i>
<i>Patho-biological mechanisms: tissue healing mechanisms and pain mechanisms</i>
<i>Physical impairments and associated structure/tissue sources</i>
<i>Contributing factors to the development and maintenance of the problem</i>
<i>Precautions and contraindications to physical examination and treatment</i>
<i>Management and treatment</i>
<i>Prognosis</i>

Table 4.2 Hypothesis categories for manual therapists (Jones et al. 2008)

4.6.3 Collaborative clinical reasoning model

The clinical reasoning model proposed by Jones (1992) served to identify the cyclical, dynamic nature of clinical reasoning of the manual therapist, but failed to acknowledge the patient’s role during the decision-making process. Edwards (1995) extended Jones’ model, to emphasise the important role the patient plays during the reasoning process. The ‘Collaborative model’ explicitly incorporates the patient in the reasoning process, appreciating the ‘bigger picture’ and placing the presenting signs and symptoms in the context of the patient. Richardson et al. posit that “professional accountability and governance of healthcare resources are equally demanded by patient, who have moved

from being passive recipients to critical consumers of healthcare” (Richardson et al. 2004, p.3). The collaborative model addresses this shift in the patient’s role, and the model may be regarded as a less paternalistic approach. The model depicts that the patient, as well as the therapist will possess their own ideas and hypotheses about what their problem might be, and through a mutual process of reassurance and problem solving both parties co-construct the diagnosis and subsequent management (1995). The collaborative decision-making model is shown in Figure 4.2 below.



Figure 4.2 Collaborative clinical reasoning model (Edwards 1995)

The collaborative model of clinical reasoning emphasises the cyclical process of hypothesis generation and/or pattern recognition, and testing, which begins early on in the patient encounter. It appears to be dynamic, and clearly recognises the patient’s thoughts about their problem which facilitates the physical therapist in obtaining an evolving understanding of the patient and their problem. Jones comments that “responsibility is shared between the patient and the therapist, with the patient being encouraged to take an active role in the management, increasing the likelihood of

continued self-management” (Jones 1995, p.21). However, when taking a closer and critical look at the collaborative model (Figure 4.2) it appears that a greater importance is placed on the practitioner’s role and that the ‘power’ of the relationship may be unbalanced. Firstly, while *knowledge*, *cognition* and *metacognition* are pivotal in the practitioner’s clinical reasoning, Edwards’ model does not recognise these dimensions on the side of the patient. The patient’s own knowledge about their health and disability and reflective self-awareness about their role in the ‘collaboration’ and subsequent actions (such as self-management strategies and lifestyle changes) should be recognised as equally important.

Secondly, the practitioner side of the model (on the left hand side) appears taller, somewhat ‘towering over’ the patient’s own thoughts about their problem. This arrangement evokes a practitioner-centred view of clinical reasoning, which was evident in the early clinical problem-solving models during the period of a more disease-centred view of pain and disability. The reasoning models from this period (such as those by Elstein (1978), and Schmidt (1990)) appear to place the practitioner in a more dominant and important position over the patient. In addition, like Jones’ (1992) physiotherapy model reviewed in Section 4.6.1, Edwards’ model is also theoretical, and the degree to which it represents real-world practice, and whether elements of the theoretical model may extend to other manual therapy professions, such as osteopathy, requires further research. Further research exploring the transferability of Edwards’ model to osteopathy could provide important knowledge of how the concept of ‘collaboration’ relates to osteopathic clinical reasoning and practice, and generate information regarding the types of osteopath-patient relationships.

These deficiencies have partly been addressed by Moore (2004), who presents a revised version of Edwards’ (1995) early collaborative model (termed the ‘cooperative model’), which places equal emphasis on both the therapists’ and patients’ thoughts during the reasoning process. The cooperative decision-making is shown in Figure 4.3 overleaf.



Figure 4.3 Moore's (2004) Cooperative decision-making model, adapted from Edwards' (1995)

The cooperative model developed by Moore (2004) went further in emphasising the patient-practitioner relationship, and the prevailing effects of the attitudes, values and beliefs and expectations and needs of the patient and the practitioner. The meaning that the patient attributes to their problem, depending upon their belief system and personal knowledge, may have a profound effect on their problem, such as increased pain, inability to work and subsequent depression. This shifts the position of the patient from a 'simple' biomedical paradigm, and places them into a more complex, yet more representative, biopsychosocial sphere of care. Only through mutual enquiry and interaction can the therapist formulate an effective assessment and treatment plan. Later work by Edwards reinforces this notion, adding "If the construction of meaning is not part of the therapist's inquiry and interaction with the patient, then critical hypotheses related to management and outcome may either remain un-elicited or on the table, as it were, but not understood" (Edwards 2001, p.21). Notwithstanding Moore's developments of Edwards' (1995) model, like Jones' (1992) model, it remains a

theoretical model which requires testing and development through further research, such as this study.

4.6.4 Clinical reasoning strategies

Of particular relevance to this thesis is the seminal work of Ian Edwards investigating patterns of clinical reasoning of expert physiotherapists in Australia, which he termed *clinical reasoning strategies* (Edwards 2001; Edwards et al. 2004a). In contrast to the largely theoretical models reviewed previously in this chapter, the clinical reasoning strategies proposed by Edwards were developed through research, and therefore are particularly significant. A clinical reasoning ‘strategy’ has been defined in the occupational therapy literature as a “method or approach to reasoning where there is the selection of a structure or organisation for one’s reasoning process” (Fleming 1991a, p.989). Using a grounded theory multiple case study approach within an interpretive paradigm, Edwards et al. set out to explore the nature and scope of clinical reasoning and knowledge used by expert practitioners in three different specialities of physiotherapy; orthopaedic (manual-musculoskeletal), neurological and domiciliary care. Edwards and colleagues (Edwards et al. 2004a) aimed to elaborate upon and give a greater depth of understanding to the previous work by Jensen et al. (1990; 1992) which developed a conceptual framework representing the elements of the physiotherapy practice and which informed their later study exploring the attribute dimensions (i.e. clinical qualities) of expert and novice physical therapists (discussed later in Section 4.6.8)

The study by Edwards (2004a) focused on six peer-nominated practitioners (two from each discipline), which met the following criteria of expertise; teaching experience, years in practice and academic qualifications. Observation of the treatment sessions, interviews (unstructured and semi-structured) and written material from the therapists (a ‘timeline’ of factors and people whom they considered to be influential on their practice and reflective diaries) served as the data collection methods. After the initial data collection, six further expert physiotherapists were interviewed to corroborate the data from the primary sample. As is the case with grounded theory, the data was analysed via the constant comparative method of analysis, and the findings compared to existing data and theories.

What developed from the study was that individual therapists, regardless of the discipline, utilised similar clinical reasoning strategies, which were associated with a wide range of clinical actions during practice. The strategies appeared to be driven by cues from the patient-practitioner interaction, and could be employed individually but were often employed in combination with each other at any given time (Edwards et al. 2004a); for example, using rehabilitative exercise techniques (*strategy*: teaching as reasoning) to provide information on the reproduction of pain and other symptoms (*strategy*: diagnostic reasoning). Emphasising the distinctiveness of each strategy, Edwards et al. assert that “each clinical reasoning strategy requires an orientation of thinking and action, which is not subsumed by the other” (Edwards et al. 2004a, p.323). The interrelatedness of the different clinical reasoning strategies identified by Edwards highlights the complexity of clinical reasoning and offers a deeper understanding when compared to the theory-based models reviewed earlier in the chapter. The concerted use of strategies is supported by the earlier work of Jensen and colleagues (Jensen et al. 1990; Jensen et al. 1992), which is discussed later in Section 4.6.8.

The strategies identified by Edwards et al. (2004a) corresponded with reasoning strategies identified in existing physiotherapy research and previously in other health professions; diagnostic reasoning in medicine (Elstein et al. 1978), procedural, interactive reasoning and predictive reasoning (Fleming 1991b) in occupational therapy, collaborative reasoning (Jensen et al. 2000) and teaching-as-reasoning (Sluijs 1991) in physiotherapy, and ethical reasoning (Gordon et al. 1994) in nursing. Table 4.3 illustrates the clinical reasoning strategies identified by Edwards (2001; 2004a), and shows how they correspond to clinical reasoning strategies in a range of health professions.

Clinical reasoning strategy	Explanation (Edwards et al. 2004a)	Example	Occupational therapy	Nursing	Physiotherapy
Diagnostic reasoning	The formation of a diagnosis related to physical disability and impairment with consideration of associated pain mechanisms, tissue pathology, and the broad scope of potential contributing factors.	Include diagnosis formulation by hypothetico-deductive reasoning and pattern recognition in order to reveal the underlying pain mechanisms and tissues causing symptoms.	(Rogers and Holm 1991)	(Tanner et al. 1987; Scholes et al. 2012)	(Payton 1985; Thornquist 2001a; Doody and McAteer 2002; Edwards et al. 2004a; Cruz et al. 2012a)
Narrative reasoning	Involves the apprehension and understanding of patients' "stories," illness experiences, meaning perspectives, contexts, beliefs, and cultures.	Imagining the 'life story' of how a patient copes at home following a stroke or the impact that knee arthrosis has on the work of a taxi driver.	(Mattingly 1991a)	(Benner et al. 1992)	(Edwards et al. 2004a)
Procedural reasoning	The decision-making in determining and performing treatment and examination procedures.	The use palpation procedures to inform a joint manipulation or muscle energy technique.	(Fleming 1991b; Unsworth 2001)	(Benner et al. 1996)	(Edwards 2001; Edwards et al. 2004a)
Interactive reasoning	The purposeful establishment and ongoing management of therapist patient rapport.	Engaging in conversation with a patient periodically to continually assess the effects of a joint mobilisation technique.	(Fleming 1991b; Unsworth 2001)		(Edwards 2001; Edwards et al. 2004a)
Collaborative reasoning	The nurturing of a consensual approach toward the interpretation of examination findings, the setting of goals and priorities, and the implementation and progression of intervention.	The collaboration during a muscle-energy technique or the practitioner-patient cooperation established during goal setting for a rehabilitative exercise programme.	(Mattingly and Fleming 1994a)		(Jensen et al. 1999; Edwards et al. 2004a; Edwards et al. 2004b)
Reasoning about teaching	Reasoning directed to the content, method, and amount of teaching in clinical practice, which is then assessed as to whether it has been effectively understood.	The information gained from the performance of a rehabilitative exercise to further inform the diagnosis, treatment approach or prognosis.	(Fleming 1991a)		(Sluijs 1991; Edwards et al. 2004a)
Predictive reasoning	The active envisioning of future scenarios with patients, including the exploration of their choices and their implications.	Predicting the clinical course and outcome of a patient with neck pain (response to current and future treatment approaches).	(Fleming 1991a, 1991b)	(Fisher and Fonteyn 1995)	(Edwards et al. 2004a)
Ethical reasoning	The apprehension of ethical and practical dilemmas that impinge on the conduct of intervention and its desired goals.	The use of ethics found in professional codes of practice or ethics from past life and clinical experiences (e.g. informed consent, confidentiality issues).	(Schell and Cervero 1993; Unsworth 2004; Unsworth 2005) (termed <i>pragmatic reasoning</i>)	(Gordon et al. 1994; Goethals et al. 2010)	(Beeston and Simons 1996; Edwards et al. 2004a; Edwards and Delany 2008)

Table 4.3 Clinical reasoning strategies identified in a range of healthcare professions (modified from Thomson et al. 2011a)

4.6.5 Dialectical model of clinical reasoning

From his findings, Edwards et al. (2004a) allied the different decision-making processes to the different forms of adult learning, previously posited by Mezirow (1991). By aligning Mezirow's concept of *instrumental* and *communicative* learning, Edwards (2001; 2004a) developed a theoretical framework to describe the interaction between the different paradigms of knowledge and reasoning processes, termed a '*dialectical model of reasoning*'. Dialectical reasoning brought together the two research paradigms with different assumptions on knowledge generation and the nature of reality with the two broad classifications of clinical reasoning processes already prevalent in the literature, 'diagnostic reasoning' (Elstein et al. 1978, 1990) and 'narrative reasoning' (Mattingly 1991a; Mattingly and Fleming 1994a). Edwards proposed that in reference to clinical reasoning, the terms 'narrative' and 'communicative' and the terms 'hypothetico-deductive' and 'instrumental' may be considered synonymous (Edwards et al. 2004a). The dialectical model of reasoning recognises that the assumptions underlying quantitative research, such as a measurable, single objective reality also underpin diagnostic (hypothetico-deductive) reasoning. In a practical sense this would include the interpretation of a clinical test such as passive joint mobility or a leg length measurement commonly used in practice. Conversely, when exploring the patient's expectations, the impact of their pain and dysfunction on quality of life, and where a consideration of both the patient and the practitioners' perspectives is necessary, a communicative form of decision-making and management would be more appropriate. Practitioners move along this continuum from 'pole-to-pole', from relativistic thinking to universalistic thinking, in response to the challenging and complex environment of clinical practice (Christensen et al. 2008). This view of clinical reasoning appears to capture the dynamic nature of professional practice and acknowledges the intricate relationship between knowledge and reasoning.

Edwards states that the different paradigms of knowledge (positivist and non-positivist) represent the polarity of reasoning present in the physiotherapists participating in his study (Edwards 2001). This suggests a dichotomous view, whereby the different forms of knowledge are mutually exclusive. However, Edwards cautions against the dialectical model of reasoning representing a conflict between hypothetico-deductive reasoning and reasoning with meaning, rather he maintains that "there is an intrinsic and indivisible relationship between the two forms" (Edwards 2001, p.280).

Edwards (2001) model of dialectical reasoning is consistent with Schön's view of professional practice (Schön 1987). Schön uses the metaphor of '*hard, high ground*' to reflect those relatively clear-cut moments in practice, when the practitioner can apply explicit technical or propositional knowledge in order to solve clinical problems and make clinical decisions (Schön 1987). This would involve practitioners in adopting an instrumental approach to clinical reasoning aiming to generate knowledge from the empirico-analytical paradigm, to obtain biomedical explanations for symptoms. In contrast, Schön's metaphor of the '*swampy lowlands*' represents the 'grey area' of practice where problems are complex, ambiguous and defy a technical and straightforward solution (Schön 1987). In these complex situations, practitioners would tend to adopt a communicative approach to clinical reasoning, drawing on a broader range of knowledge types (such as those illustrated in Table 4.1 previously).

The dialectical model of clinical reasoning offered by Edwards (2001) attempts to place the diagnostic knowledge generated from the empirico-analytical paradigm (such as tissue pathology and physical dysfunction) in the context of the patient, their values, beliefs and lived experience (knowledge from the interpretivist paradigm). Johns (2009) appears to support Edwards' concept of an interdependence of the two poles, and emphasises that due to the unpredictability of practice, it is critical that practitioners are comfortable to 'visit' both poles. The practitioner must reside in the swampy lowlands but also be secure in visiting the high, hard grounds, in order to properly incorporate relevant theories and research into practice (Johns 2009).

4.6.6 Dual processing model

More recent theories of human cognition and decision-making lend support to Edwards' (2001) model of dialectical reasoning and maintain the notion that there are two distinct, yet integrated, approaches to clinical reasoning. Emerging from the fields of cognitive and social psychology, the 'two-system' or 'dual-process' theories propose that there are two different modes of reasoning, commonly termed 'System 1' and 'System 2' reasoning processes (Evans 2008). Croskerry describes the first system as an *intuitional approach* which "leans heavily on the experience of the decision maker and uses reasoning that depends on inductive logic" (Croskerry 2009, p.1022). This system may be regarded as rapid, contextual and 'automatic' (Evans 2008). System 1 has similar features to the forward reasoning/pattern recognition processes described by Patel and

colleagues (Patel and Groen 1986). System 2 has been described as an *analytical approach* and involves “hypothesis testing and deductive reasoning; it is analytical, involves critical thinking, and is logically sound” (Croskerry 2009, p.1022). The second system contrasts with the first in that it is purposeful, conscious is often associated with well-organised problem-solving (Norman 2009), and is akin to the hypothetico-deductive reasoning approaches posited by Elstein and colleagues (Elstein et al. 1978). As with pattern recognition and hypothetico-deductive reasoning, the appropriate strategy may be related to the nature of the problem (Norman 2009). The theory proposes that during complex problem solving, clinicians rely on the more interpretive system 1 mode, which is in contrast with previous developers of pattern recognition and hypothetico-deductive reasoning (Elstein et al. 1978; Patel and Groen 1991). Norman argues that processing using system 1 may be more effective in such situations because analytical processing of complex problems may go beyond the capability of human information processing; for uncomplicated problems, explicit analytical reasoning (system 2) may be adequate (Norman 2009).

In practice, both systems operate together, with initial salient features of the clinical presentation (pattern) recognised immediately and automatically by system 1 processes. System 2 ‘kicks in’ if the pattern or presentation is not recognised, and uses an analytical, deductive process to logically make sense of the presentation/situation through objective and systematic assessment of the data and cues (Croskerry 2009). Croskerry (2009) suggests that either one can over-ride the other, but stresses that the role of system 2 is to monitor system 1, essentially via metacognitive processes.

The dual-processing theory of clinical reasoning has similarities to Edwards’ (2001) dialectical model of reasoning, discussed previously, with the former primarily focused on diagnostic reasoning and the latter occurring throughout the patient encounter. However, both models echo the notion that decision makers have on the one hand an intuitive/tacit mode of reasoning and on the other a mode which is analytical/explicit. The dual processing model is considered to be a general and overarching theory of cognition and decision-making. Further research is necessary to explore how aspects of this broad model relate specifically to osteopaths and the relationship between these modes of reasoning and clinical osteopathic practice.

4.6.7 Integrated patient-centred model of clinical reasoning

Originally proposed in 1995, the integrated patient-centred model of clinical reasoning by Higgs and Jones (1995), depicted a dynamic process with the patient at the ‘heart of the action’. Clinical reasoning was portrayed as a process of reflective inquiry involving the patient, with a major goal being to obtain a meaningful and contextually relevant understanding of the clinical problem to form a sound and solid base for clinical intervention (Higgs and Jones 2000). The model involves the application and integration of three ‘core elements’ of clinical reasoning already discussed in this chapter; knowledge, cognition and metacognition (Higgs and Jones 2000). According to Higgs and Jones (1995), practitioners should possess a strong and well organised discipline-specific knowledge base as described in the ‘script theory’ proposed by Schmidt et al. (1990). Cognition comprises of thinking skills (such as data analysis, synthesis and the evaluation of the collected data) and would be the domain of the two diagnostic reasoning strategies, namely hypothetico-deductive reasoning (Elstein et al. 1978) and pattern recognition (Patel and Groen 1986). Metacognition or reflective self-awareness offers a link between knowledge and cognition. Engaging in metacognition, provides an awareness and monitoring of reasoning processes to enable practitioners to actively reflect on the supporting and negating ‘evidence’ upon which their clinical decisions and subsequent actions are made (Jones 1992). The model proposed by Higgs and Jones (2000) was depicted as an upward and outward spiral with each loop of the spiral illustrating a cyclical process of data input, data interpretation and problem formation to obtain a wider and deeper understanding of the clinical situation.

Later, in recognition of the growing awareness of the patient and the importance of the patient playing an active role in their treatment and management, Higgs and Jones (2008) revised their model to include the dimensions of; mutual decision making, contextual interaction and task impact. These additions are discussed below, with the revised integrated patient-centred model of clinical reasoning offered by Higgs and Jones (Higgs and Jones 2000) illustrated in Figure 4.4.



Figure 4.4 Revised integrated patient-centred model of clinical reasoning (Higgs and Jones 2000)

It appears that the addition of mutual decision-making is congruent with the collaborative decision-making strategy later developed by Edwards et al. (2004a; 2004b). This aspect of the model emphasises more than solely patient compliance with exercise and lifestyle advice, but also emphasises a cooperative process where goals and strategies for care are planned and consulted together with the patient (Edwards et al. 2004b). Contextual interaction involves the interactivity between the practitioner and the situation of the reasoning process (Higgs and Jones 2000). The importance of this dimension is supported by the earlier work of Jensen and colleagues (1990; 1992), investigating expertise in physical therapy practice in the USA. The researchers found that a key attribute of experienced practitioners was their ability to be fully aware and control the clinical and treatment environment, whilst maintaining a concentrated focus on the patient and the ongoing interaction (Jensen et al. 1990; Jensen et al. 1992). Higgs and Jones' final additional dimension of 'task impact' represents the influence of the nature and parameters of the clinical problem on the clinical reasoning process. These may include the nature of the patient presentation, and whether the problem is changeable, multi-dimensional or uncertain (Higgs and Jones 2000).

Building on their model further, recently Higgs and Jones added a further four meta-skills to their integrated patient-centred model of clinical reasoning, to include the acquisition of knowledge from practice, the location of clinical reasoning strategies

within a philosophy of practice, the reflexive ability for practitioner growth and patient well-being, and finally the use of critical conversations to make clinical decisions (Higgs and Jones 2008). These meta-skills appear to represent a greater demand on the practitioner and their profession to be more introspective in their role in health management and more accountable for their decisions and actions, and serve to provide a more comprehensive model of clinical reasoning. The integrated patient-centred model of clinical reasoning offers a comprehensive theoretical model of clinical reasoning from the perspectives of physical and occupational therapy. However, as a largely theoretical model, its transferability to osteopathic practice needs to be explored through further research.

4.6.8 Clinical reasoning and expertise

Well developed clinical reasoning skills are considered to be a fundamental part of clinical expertise (Jensen et al. 2008). Research evidence of the nature of clinical expertise in osteopathy, and the ways in which expertise can be acquired and developed by practitioners is extremely sparse. This section outlines the ways in which clinical expertise can be defined, and then focuses on key research investigating the nature of expertise in the physical and manual therapy professions.

4.6.8.1 Defining expertise

A large portion of clinical reasoning research has focused on the ‘essence’ of expertise. Research into the expertise of healthcare practitioners aims to address fundamental questions such as: ‘What is it that an expert practitioner does (or has) that a novice doesn’t?’ ‘How can novices attain these attributes?’ ‘How can expert practitioners effectively communicate their clinical reasoning to less expert practitioners?’ or the question posed by Rothstein, “What is the ‘magic’ of the successful practitioner?” (Rothstein 1999, p.xviii). Answering these questions and producing further knowledge of the development of expertise and the constituents of expert practice is generally agreed to be a significant and important area of clinical reasoning research. The term ‘expert’ itself is somewhat problematic and there is no single consensually agreed definition. A relatively straight-forward definition of the term is provided by Holyoak (1991) who comments that an expert is “someone capable of doing the right thing at the right time” (cited in Jensen et al. 2008, p.123). However, as a stand-alone term, ‘expert’ suggests an achievement, a static end point, which one need not or may not go beyond.

Rather, clinical expertise, like all areas of clinical practice should be considered a dynamic journey rather than a finite endpoint (Higgs et al. 2004c). From the perspective of nursing, Scholes reinforces the notion of dynamism in expertise, and eloquently comments that “expertise is a journey rather than a destination, and critical reflection is the vehicle in which that journey is made, and the acquisition of new theoretical and experiential knowledge fuel the vehicle” (Scholes 2006, p.6). It is currently unknown how the development of practitioners’ clinical reasoning skills relates to clinical expertise in osteopathy, thereby reinforcing the significance and potential contribution of this research study.

Offering a more practical definition, Rothstein considers that “the expert is the practitioner known to achieve the best outcome and that if an expert is not clinically more successful then what is the point?” (Rothstein 1999, p.xvi). Taking this view, it would appear that, one ultimate purpose of developing expertise or ‘becoming an expert’ is to enhance care and achieve better patient outcomes. However, only a few studies investigating clinical reasoning expertise use clinical outcome as a criteria for expert status. Rather, peer recognition (practitioner reputation) (Jensen et al. 1992; Unsworth 2001; Edwards et al. 2004a), years in practice (experience) (Jensen et al. 1990; Embrey et al. 1996; Doody and McAteer 2002; Smart and Doody 2007) and academic achievements are the criteria of choice either individually or in combination (Jensen et al. 1990; Edwards et al. 2004a). While these criteria may be a prerequisite for expertise, there have been criticisms of them all (for example, Shanteau et al. 2002), and little research exists to demonstrate that they lead to better clinical results. Relatively recently, the use of clinical outcomes has been suggested as a method to identify experts in clinical practice (Resnik and Hart 2003; Resnik and Jensen 2003).

4.6.8.2 Development of expertise

As discussed, experience, or years in clinical practice, is a common criteria used to define and identify expertise, most probably due to the influential work by the Dreyfus brothers, who proposed a model of skill acquisition. The theoretical model proposed by Dreyfus and Dreyfus (1986) has attracted significant attention in professional education. It depicts five stages of skill acquisition, ranging from novice to expert, with the emphasis on perception of decision-making instead of routine action and procedure. The Dreyfus’ model attempts to explain how individuals progress from an early analytical

behaviour to a stage of skilled behaviour, with learning from experience as a strong theme. An important concept from the Dreyfus brothers' model is that most expert performance is surprisingly non-reflective (Eraut 1994). This is discordant with the previously discussed literature on metacognition and reflection as an essential component to decision-making expertise. However, the authors do acknowledge that, when confronted by an unusual problem, or when the outcome is especially critical, experts will engage in deliberation, which is described as being not so much problem-solving as critical reflection on their own intuitive processes (Dreyfus and Dreyfus 1986). Eraut (1994) has criticised the Dreyfus' model for its neglect of metacognitive processes to command an individual's (the decision-makers) behaviour and also says that it underestimates the use of deliberation (Eraut 1994). Eraut argues that deliberation is evident in proficient as well as expert level professionals, and that deliberation and intuition may be integrated in several ways (such as using prior experience to suggest which lines of deliberative inquiry are most worth pursuing or when several individuals may be consulted with their differing views and opinions fed into group deliberations), rather than using deliberation as a metacognitive strategy purely to check intuitions (Eraut 1994).

Other problems arise when using the Dreyfus' theoretical model to explain the development of expertise. Firstly, the model assumes that given enough time and exposure to different situations one will 'naturally' become an expert. However, years of practice and experience alone does not necessarily correlate with expert performance (Ericsson and Charness 1994; Resnik and Hart 2003). A central assumption of the Dreyfus' model is that expertise is developed through learning from practice, however it fails to provide an explanation for *how* learning experiences which occur in and from practice facilitate the development of skills and expertise. Secondly, as alluded to earlier in this section, the level of 'expert' denotes a static, final achievement rather than a dynamic process involving critical reflection on the knowledge and skills acquired during that journey (Scholes 2006; Jensen et al. 2008). If this was the case, then what lies beyond the status of expert?

Aware of the limitations of the research methods of the cognitive sciences in exploring clinical reasoning and expertise, Benner (1984) used an interpretive research approach and adapted the Dreyfus' model of skill acquisition to analyse data collected from

critical incidents of practice experience, recalled by 93 nurses. Benner (1984) applied the Dreyfus' model to describe the nature of nursing expertise as a whole, and was able to describe the characteristics of practice as progressing through five different levels of nursing skill: novice, advanced beginner, competent, proficient and expert, as depicted in Table 4.4.

Stage	Knowledge use	Action	Orientation	Decision-making
<i>Novice</i>	Factual	Given rules for actions	Cannot see whole situation	Rule-governed, relies on others
<i>Advanced beginner</i>	Objective facts	Begin use of intuition in concrete situations	Limited situational perception	Less rule-governed, more sophisticated rules, relies on others
<i>Competent</i>	Hierarchical perspective	Devise new rules based on situation	Conscious of situation	Makes decisions, feels responsible
<i>Proficient</i>	Situational	Intuitive behaviours replace reasoned responses	Perceives whole situation	Decision making is less laboured, can discriminate
<i>Expert</i>	Knows what needs to be done based on practiced situational discrimination	Intuitive and deliberate rationality, where intuition nor developed, reasoning applied	Can discriminate among situations and know when action is required	Knows how to achieve goals

Table 4.4 The Dreyfus' model of skill acquisition adapted by Benner (1984)

The stages described by Benner appear to recognise the complexity of nursing expertise, and show that nurses' perceptions and decision-making are individual and based on situational demands and specificity. According to Benner, the development of expertise occurs as a result of the blending of 'intuition' with reasoning which is predominantly learnt from watching and interacting with others during clinical practice (Benner 1984).

However, there have been criticisms of Benner's model of skill acquisition, perhaps unsurprisingly directed at the final stage, where the 'expert' moves away from conscious practice, to practice which is fluid, automatic which is *intuitive* in nature (Lyneham et al. 2008). Two main issues with Benner's model are: first the use of the term 'expert', which, as discussed previously is an ambiguous concept, which she fails to adequately explain; secondly, that the notion of intuition, while it may reflect the type of reasoning that 'expert' nurses display, requires expansion, such as what is intuition and how can it be acquired? More recent research appears to be able to 'unpack' the concept of intuition into a range of components (Paterson et al. 2005, 2006). Patterson and colleagues, from the perspective of occupational therapy, offer a model of 'professional practice judgement artistry' (PPJA) (Paterson et al. 2005). The PPJA model sheds light on the advanced (intuitive) reasoning associated with expertise and proposes that the combination of multifaceted judgement (capability to juggle the many human, technical and contextual facets of judgement), a multidimensional knowledge base (including personal, propositional and practice knowledge) and the ongoing process of reflexivity, enable the practitioner to negotiate the highly complex problems that arise in professional practice (Paterson et al. 2005).

4.6.8.3 Expertise in physical and manual therapy

Influenced by Benner's work in nursing (Benner 1984), Elstein's work on hypothetical deductive models of clinical reasoning studies in medicine (Elstein et al. 1978) and Payton's work in physiotherapy (Payton 1985), Jensen and colleagues (1990; 1992; 2000) set out to explore the nature of expertise of physical therapists in the USA. This research, spanning eight years, was unique in that not only was it the first attempt to take an in-depth look into the workings of physical therapists, but it was also amongst the first to place clinical reasoning research within the interpretive paradigm. This offered a flexible research approach which was situated to be able to not only study clinical reasoning but also the type of knowledge used and qualities of clinical expertise. Jensen and colleagues early work (Jensen et al. 1990) aimed to develop a conceptual framework and data collection tool for use with future research on physical therapy expertise. Practitioner-patient interactions during treatment sessions provided the data, which was collected by clinical observation, including field notes and audio-recording of novice (less than two years of clinical experience) and experienced (twelve years or more of clinical experience) physical therapists.

The authors primarily focused on observing, what they called the ‘black box’, meaning a single therapeutic treatment session. In their preliminary study, Jensen and colleagues identified five themes representing a small part of the conceptual framework, which they considered as possible dimensions of the practice environment and therapeutic intervention that may distinguish between experienced and novice practitioners (Jensen et al. 1990). Two themes (allocation of treatment time and impact of the therapeutic environment) were deemed by the authors to constitute organisational factors that influenced the therapeutic intervention (Jensen et al. 1990). Three other themes (types and use of information gathered, degree of responsive therapeutic interaction and integration of therapeutic and social interaction) related to the observable therapeutic interaction between patient and therapist (Jensen et al. 1990). Jensen et al. (1990) found that compared to novices, experienced practitioners spent an intense period with each patient during the hands-on treatment, using more of the total treatment time in direct patient contact. The finding that experienced practitioners seamlessly integrated hands-on treatment with social interaction is consistent with physiotherapy research conducted in Norway, which found communication to be a continuous and relationship forming tool (Thornquist 1991). Jensen et al. also identified that experienced therapists were more able to handle interruptions and distractions, without disrupting the treatment session, suggesting an ability to ‘juggle’ the dynamic nature of professional clinical practice. From the remaining themes, the researchers described the practice of experienced therapists as more socially engaging, whilst still completely focused on the patient and their treatment modality. Jensen and co-workers claim that the experienced practitioners appeared to “enter the lives” of their patients with a two-way street of eliciting and providing information pertaining to the treatment (Jensen et al. 1990, p.321).

A second study by Jensen et al. built on the first, and researchers used the conceptual framework they developed previously (Jensen et al. 1990) to further investigate novice and what they termed ‘expert’, or ‘master’ physical therapists (Jensen et al. 1992). Interestingly, the researchers acknowledged the ingredients of skill and art in combination with expertise in defence of their use of the term ‘master’ rather than

‘expert’ practitioner, akin to the notion of ‘connoisseurship¹⁹’ proposed by Beeston and Higgs (2001). The researchers used a qualitative case study approach (adopting a grounded theory methodology) and they were intent on determining whether and how the five themes from their previous study were represented in novice and master practitioners. Data collection methods, as in the previous study, entailed observation of practitioners’ (a sample of three novice and three master clinicians) treatment sessions, or the so called ‘black box’, which were audio-recorded. In addition, the researchers used reviews of patient records together with patient interviews and interviews with clinicians for details of their own decision making and clinical skills.

The data was analysed within and across each of the six clinicians’ cases. The findings led to a revision of the five themes identified in their previous study (Jensen et al. 1990), which they termed ‘attribute dimensions’. The five dimensions developed by Jensen et al. (1992) are shown in Table 4.5.

Attribute dimension	
1.	Ability to control the environment
2.	Evaluation and use of patient illness and disease in a context-rich evaluation
3.	Focused verbal and nonverbal connection with the patient
4.	Equal importance of teaching to hands-on care
5.	Confidence in predicting effective patient outcomes based on knowledge of pathology and experience with the course of healing

Table 4.5 Attribute dimensions of master physical therapists (Jensen et al. 1992)

Rather than uncovering the clinical reasoning processes or strategies of master practitioners, Jensen and colleagues characterised the therapeutic intervention as both a cognitive skill and as an improvised ‘performance’ and explored the difference in how these two skill categories were ‘played out’ in the so called black-box. As a result of the study, the researchers were able to provide a more rounded definition of the black box as “the strong, one-to-one relationship between client and therapist, centred around the

¹⁹ *Connoisseurship* is considered an element of professional artistry which is described as a “way of knowing and seeing which demonstrates an expert critical appreciation and ability to disclose or express what has been seen before” (Beeston and Higgs 2001, p.108).

identification and rehabilitation of the client's movement dysfunction problems" (Jensen et al. 1992, p.712). In light of contemporary research, the 'contents' of the black box could be considered to be the range of clinical reasoning *strategies* (Edwards et al. 2004a), as discussed earlier in Section 4.6.4.

From the perspective of the structure and nature of knowledge, the findings suggested that the master practitioners displayed a more elaborate cognitive framework partly founded on their knowledge of pathology and biomedicine and partially due to their previous clinical experience, thereby supporting the notion of knowledge organisation in the script theory proposed by Schmidt et al. (1990). These factors led to the master therapist possessing an enhanced confidence in their treatment and prognosis predictions, such as how their patients may or may not respond to treatment. This meant that the practitioners were always 'one-step ahead', allowing them to adapt to unforeseen clinical situations. In contrast, novice therapists were more laboured, and rule-governed in their data collection, and were more focused on 'box ticking', filling in their evaluation forms for the emergence of a diagnosis, or as the researchers later described "a shot-gun approach" to data collection (Shepard et al. 1999, p.571). The ability of the master practitioner to predict patient outcomes was not identified in Jensen's previous work (Jensen et al. 1990), and the authors felt that this attribute was made visible by the interview data obtained from the clinicians with regard to their treatment approaches.

The predictive ability is consistent with the 'predictive reasoning' strategy later identified by Edwards' study into the clinical reasoning of physical therapists (Edwards et al. 2004a). Prediction of patient outcomes was also a strong theme from Beeston and Simons' phenomenological study on physiotherapists' perspectives on their practice, and many of the practitioners interviewed felt that making predictions was "part of their unique contribution to the medical team" (Beeston and Simons 1996, p.237). Consistent with Jensen's earlier study (Jensen et al. 1990), the 'attributes' study showed that master practitioners were intensely patient-focused throughout the treatment intervention; took control of the clinical environment and were less easily distracted by external stimuli; were more receptive and responsive to both verbal and non-verbal cues from the patient; and were 'smoother' at integrating hands-on evaluation, treatment and patient education (Jensen et al. 1992).

In their final study, Jensen and colleagues (2000) took a more comprehensive and in-depth look at physical therapy practice to identify the core dimensions of expertise across four clinical specialities: geriatrics, neurology, orthopaedics and paediatrics. On this occasion, the participants were made up of twelve peer nominated experts, three practitioners for each of the clinical disciplines under investigation. A grounded theory, multiple case study design was employed, and the now-experienced research team included interviews and observation of practitioners, video-recording of patient treatment sessions and the reviewing of documents (published papers, patient records, teaching materials) as their methods of data collection. Within-and cross-case analysis, led Jensen et al. (2000) to develop a theoretical model of expert practice, represented by four major dimensions, as illustrated in Figure 4.5.



Figure 4.5 Core dimensions of expert practice in physical therapy (Jensen et al. 2000)

As an attribute, knowledge included propositional and professional craft knowledge, with the peer nominated experts consistently recognising the importance of the

knowledge gained from patients over propositional knowledge gained from textbooks and other academic sources. The experts had a breadth and framework of knowledge that had been formed from self-monitoring of their own knowledge and practice, supporting the theoretical notions and research findings of the importance of metacognition on expert physiotherapy practice (Payton 1985; May and Dennis 1991; Jensen et al. 1992; Jones 1992; Embrey et al. 1996).

Consistent with previous research, there was little evidence that the experts used hypothetico-deductive reasoning, but rather demonstrated a complex, multidimensional reasoning process which was collaborative in nature. The expert practitioners appeared to adopt reasoning approaches similar to what Fleming (1991b) described as *conditional* reasoning. Conditional reasoning is an especially complex form of reasoning and is described as one which is “elusive” and “moves beyond specific concerns about the person and the physical problems, and places them in broader social and temporal contexts” (Mattingly and Fleming 1994b, p.18). The complexity of conditional reasoning and how it interrelates with the other clinical reasoning strategies is matched by the complexity and multifaceted nature of the clinical experts that employ it.

4.7 Research questions and aims

The theories and research reviewed in this chapter show that clinical reasoning is considered to be fundamental component of professional clinical practice from the perspective of a wide range of health professions. There is virtually no research on the clinical reasoning of osteopaths, and therefore there is currently a very limited understanding of how osteopaths make clinical decisions and approach clinical practice. The literature on osteopathic principles and practice critically reviewed in Chapter 3 is predominantly theoretical and consists of ideas and concepts proposed by a relatively small number of individuals within osteopathy, rather than knowledge generated from research. Furthermore, the clinical reasoning literature critically reviewed in this chapter has demonstrated the large strides taken by other healthcare professions who have carried out research in an attempt to develop a deeper understanding of how their practitioners make clinical decisions, approach practice and develop expertise. If osteopathy is to progress further as a profession and enhance patient care, then developing research-based knowledge of these areas of professional practice is

fundamental. Research, as highlighted by this chapter, exposes the large gap in the knowledge base of osteopathy, which this thesis aims to address, and forms the basis for the research questions and aims presented in the following sections.

4.7.1 Research questions

There were a number of drivers that led to the development of the research questions and aims of this study, and these were briefly presented in Chapter 1. Specifically, my own clinical and teaching experience planted the initial ‘seed of inquiry’, and an early review of the literature, as presented in this chapter and the previous chapter, helped to develop the initial focus of this research. I embarked on this study aiming to address the following research question:

- What is the nature²⁰ of clinical reasoning of osteopaths in the United Kingdom?

However, part-way through the study, as a result of data collection and analysis, the focus of the research shifted from purely exploring the social, cognitive and interactive processes of clinical reasoning, to also include the therapeutic approaches that experienced osteopaths adopted in their practice.²¹ This re-evaluation meant that the outcomes and context of participants’ clinical reasoning, in relation to their therapeutic approach, would also need to be explored. As a result, the term *clinical decision-making* was preferred to *clinical reasoning*, as it better reflected the study’s new focus on both the *process* and *outcomes* of clinical reasoning, in relation to participants’ therapeutic approach. As a consequence of this shift, the original research question was revised and expanded to:

- What is the nature of clinical decision-making of experienced osteopaths?
- What are the therapeutic approaches adopted by experienced osteopaths?
- Do approaches to clinical decision-making vary amongst practitioners?
- What is the nature of any variation in therapeutic approach and clinical decision-making approaches?
- What factors influence practitioners’ therapeutic approaches and clinical decision-making?

²⁰ In this thesis, the term *nature* refers to a theoretical explanation.

²¹ This shift in the study’s focus is explored further in Section 6.8.2.4.

4.7.2 Research aims

The study had the following aims:

- To explore the clinical decision-making processes used in osteopathy.
- To explore the therapeutic approaches of experienced osteopaths.
- To develop an explanatory model of clinical decision-making and therapeutic approaches of experienced osteopaths.
- To test and develop the explanatory model with practicing osteopaths.

In summary, it is the aim of this research to add to the osteopathic profession's body of knowledge, and develop an explanatory model of osteopathic clinical decision-making and therapeutic approaches.

4.8 Chapter conclusion

Over the last forty years researchers have adopted a range of methods to explore the processes of clinical reasoning amongst different healthcare professionals of different levels of experience. While cognitive methods adopting a positivist approach have highlighted some differences in the diagnostic reasoning processes of expert and novice practitioners, a large proportion of these studies have focused on: 1) the speed at which diagnostic decisions are made; 2) the quantity of diagnoses made; and 3) the organisation of knowledge. Overall, the cognitive and behaviourist research approaches have taken an outcome-orientated approach in centring their efforts on the formulation of a diagnosis and the organisation of propositional knowledge, which poorly reflects the nature of professional clinical practice.

A great deal of interpretative research has been conducted by a range of healthcare professions exploring the clinical reasoning and the nature of the expertise of practitioners. The theories and research reviewed in this chapter show that multiple types of knowledge are associated with clinical practice, all of which are inextricably linked in practitioners' clinical reasoning. Furthermore, clinical reasoning is considered to be a fundamental part of clinical expertise and how practitioners can acquire and develop expertise has been explored by a range of health professions. Research has provided a rich understanding of clinical practice, thereby contributing to the knowledge base of the respective professions. These aspects of practice are yet to be investigated in

osteopathy, and this chapter serves to contextualise and justify the research aims and questions of this study, outlined earlier in Section 4.7.

The literature reviewed in this chapter provides a valuable conceptual and theoretical framework for this thesis. This literature on clinical reasoning helped to develop the initial research questions, and theoretically sensitise me in order to guide initial data collection and analysis. The literature which guided the advanced stages of data collection and analysis is presented in Chapter 8. Using the literature in this way enabled me to ask questions of the developing substantive theory, and therefore help to broaden its explanatory power and theoretical sufficiency. The next chapter discusses in detail the methodology adopted in this research, and justifies the decisions made in regard to the choice of the methods employed to address the research questions and aims of this study.

Chapter 5: Methodology

5.1 Introduction

This chapter describes and justifies the methodological decisions taken in this research. It examines the choice of methodology in light of the research questions and field of clinical practice and decision-making. It continues by positioning the study in the interpretive research paradigm and discusses how the researcher's epistemological and ontological decisions have influenced the choice of the research methods used to collect and analyse data. The chapter goes on to explore grounded theory and the issues around the insider research approach adopted in this study. Finally, it discusses the measures taken to ensure the trustworthiness of this research.

5.2 A qualitative approach

As discussed in the previous chapter, clinical reasoning and decision-making are complex, socially interactive and cognitive processes, which for the most part occur in the mind of the practitioner, and therefore it is largely hidden from observers and researchers. All healthcare professionals must and do clinically reason; although they (and others) may not be aware of how they reason or if they are doing so effectively. This study aimed to generate knowledge of the nature of clinical decision-making in osteopathy. By obtaining the views and understanding of osteopaths' own clinical practice and decision-making, an 'insider' or 'emic' perspective could be obtained (Holloway and Wheeler 2010). A qualitative approach to the research study was adopted because it facilitated understanding of socially interactive processes in the natural setting. Qualitative research looks for answers to questions that emphasise *how* social experience is created and given meaning (Denzin and Lincoln 2008). As a process of research, qualitative methods have been developed to allow a systematic investigation of how individual participants 'make sense' of the world and how they interpret and experience events and social interactions (Bryman 2008b).

The views and perceptions of osteopaths regarding their clinical practice and decision-making are subjective. These views are likely to be influenced by numerous factors, both professional and personal, as is the interpretation of these perceptions. A qualitative research approach made explicit the interaction between the participant and researcher, and acknowledges that there are multiple realities and that every person's experience is unique (Nicholls 2009). In particular, the interpretivist theoretical approach taken in this research emphasises the processes and actions of these multiple realities and aims to conceptualise them in order to understand the phenomena and processes under study (Charmaz 2006). Therefore a qualitative research approach was seen as appropriate to address the research questions of this study (Section 4.7).

Whilst this research is qualitative in nature; the term *qualitative* alone is insufficient to describe the specific knowledge, assumptions, methodology and data collection methods that the study took. Qualitative research is considered an umbrella term for a collection of general approaches (methodologies) which include a number of ontological and epistemological perspectives that guide the collection and analysis of data (Carpenter 1997; Lincoln and Guba 2000). As the 'goal' of research is to generate knowledge, researchers need to be explicit when stating the paradigm in which their work is located in. It is argued that "three fundamental facets of research: epistemology, methodology, and method, should provide the framework for planning, implementing, and evaluating the quality of qualitative research" (Carter and Little 2007, p.1316). The choices regarding epistemology, methodology and methods in relation to this research study are discussed below.

5.3 Epistemological positions of qualitative research

The paradigm of qualitative research is made up of different theoretical assumptions and methods which can be used to this form of qualitative research. Willis defines a paradigm as;

"A comprehensive belief system, world view, or framework that guides research and practice in a field"

(Willis 2007, p.8)

The basic assumptions that define a research paradigm can be drawn from the response to three fundamental questions:

- Ontological questions- What is the form and nature of reality, and therefore what is there that can be known about it?
- Epistemological questions- What is the nature of the relationship between the knower and what can be known?
- Methodological questions-How can the inquirer go about finding out what they believe can be known?

(Guba and Lincoln 1994, p.108)

This research study assumed a relativist ontology and a subjectivist epistemology. Adopting a relativist ontology meant that the researcher acknowledged the existence of multiple realities and perspectives (Guba and Lincoln 1994; Lincoln et al. 2011). By adopting a subjectivist epistemology, this research would develop an understanding of the social worlds of participants (Guba and Lincoln 1994) through a socially interactive process which would co-construct knowledge and meaning (Crotty 1998).

Working within the interpretive paradigm I carried throughout the research process certain beliefs, meanings and assumptions about the nature of knowledge and how it could be 'known'. In addition, operating within a certain paradigm influenced my choice of methodology and decisions regarding the methods of data collection. My own personal experiences also contributed to the unique perspective of my research. However, by adopting a subjectivist epistemological and relativist ontological position I and consequently my research were tied to the interpretive paradigm to which these rules and assumptions belong. The next section outlines these assumptions in the context of this research.

Numerous classification systems have been put forward to categorise, conceptualise and make explicit the differences (and similarities) between the various research paradigms (for example, Guba and Lincoln 1994; Denzin and Lincoln 2000; Creswell 2003; Willis 2007). Relevant to this study, Higgs and Titchen (2000) discuss the three most often used paradigms in healthcare research. These are: 1) the *empirico-analytical paradigm*,

to which the scientific method belongs. It adheres to the positivist philosophy, which holds the belief of a single, objective quantifiable reality; 2) the *interpretive paradigm*, which takes into account the context of the situation, timings and subjective meanings of the phenomena under investigation and accepts that there are multiple perspectives and multiple truths; and 3) the *critical paradigm*, which produces emancipatory knowledge, emphasising alternative ways of thinking and how thinking is socially and historically constructed. The empirico-analytical paradigm is often considered to be a quantitative research paradigm, while the interpretive and critical paradigms are thought of as qualitative research paradigms. This research aimed to develop an understanding of clinical practice and decision-making from the perspectives of the participants, and as such it was conducted in the interpretive paradigm. The section below further explores why and how this decision was made.

5.4 Locating this research within the interpretive paradigm

The interpretive research paradigm seeks an understanding of a particular phenomenon, and recognises that the context in which any form of research is conducted is essential to the interpretation of the data gathered (Willis 2007). The essence of interpretive qualitative research is to develop a contextual understanding of social processes, therefore the interpretive paradigm was considered appropriate for this exploration of the clinical decision-making processes of study participants. Situating this research within the interpretive paradigm meant that the research aims were to construct a theoretical model that would help understand and thereby explain the processes involved in osteopaths' clinical decision-making and their therapeutic approaches to practice.

The interpretive paradigm has been advocated as well suited to the generation of knowledge in the social sciences, in both the philosophical stance it assumes and the methods utilised to collect and analyse data (Higgs and Titchen 2000). The resulting theory generated in the interpretive paradigm assumes “multiple realities; indeterminacy; facts and values as linked; truth as provisional; and social life as processual” (Charmaz 2006, p.126). By acknowledging a relativist ontology, and a subjectivist epistemology this research assumes that there are multiple realities and that

meaning and understanding are co-constructed between the researcher and the participants (Denzin and Lincoln 2008).

This research study focused on the nature of clinical decision-making in osteopathy. As seen in Chapter 4, previous research into clinical reasoning has been situated in the interpretive paradigm in physiotherapy (for example, Beeston and Simons 1996; Jensen et al. 2000; Edwards et al. 2004a; Ajjawi 2007; Christensen 2009) and seminal research into the clinical reasoning and practice of other healthcare professionals (Mattingly 1991a, 1991b; Benner et al. 1992). It is now recognised that the interpretive approach provides an important contribution to the study of clinical reasoning and represents an additional tradition of clinical reasoning research, sitting alongside the more established approaches of behaviourism and cognitivism (Arocha and Patel 2008). Clinical reasoning is a complex and multi-dimensional process, and interpretive research lends itself to investigating practitioners' decision-making which is a task-, time- and context-dependent process (Arocha and Patel 2008) and therefore is considered an appropriate choice to address the research questions of this study.

Interpretive research into clinical reasoning commonly adopts interviews and observation as methods of data generation, and both methods have the intention of capturing the practitioners' (or patients') perspectives (Loftus and Smith 2008). Selecting interviews as the data collection method of choice would mean that I had to rely on participants' views and experiences of their practice and clinical decision-making. During interviews, participants would be required to communicate complex, multidimensional and context dependent processes, which would be a challenge to articulate (Loftus and Smith 2008). During these discussions "participants construct the meaning of a situation, a meaning typically forged in discussions or interactions with other persons" (Creswell and Miller 2000, p.8). This highlights the role of the researcher and the significance of their relationship with participants.

A constructivist grounded theory method set within an interpretivist paradigm would enable the research questions and aims set out in Section 4.7 to be addressed, which were to develop an explanatory model of clinical decision-making and therapeutic approaches in osteopathy. In this study, I have taken a relativist ontological and subjectivist epistemological stance reflecting my position that realities are multiple and

constructed and that the findings of the research are co-created by me and the research participants. Grounded theory was chosen as it would allow me to construct a theoretical, explanatory model to systematically understand the social and interactive *process* of osteopathic practice and clinical decision-making. The following sections provide an overview of grounded theory and explain the decision to adopt it in this research study.

5.5 Grounded theory

This section introduces the premises, processes and philosophical foundations of grounded theory²² and more specifically constructivist grounded theory used in this research to construct an explanatory theory of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study. Recognising the core assumptions, operating principles and the major developments of grounded theory enabled me to reflect on the key differences and similarities between different interpretations of grounded theory. This allowed me to make an informed choice as to the most suitable ‘version’ to utilise in this research, which would fit with my personal perspective and the interpretivist underpinnings of the study (Annells 1997). This section goes on to discuss the theoretical orientation of the different approaches to grounded theory, and the debates surrounding the philosophical and methodological stances they have taken. In presenting constructivist grounded theory I will discuss the development of the method since its inception, and how I consider that the methodological and philosophical ‘inadequacies’ of the original grounded theory evolved into the constructivist approach used in this study.

Grounded theory involves a systematic means to gather, analyse and conceptualise data so that a theoretical framework can be built (Birks and Mills 2011). It was originally described by two social scientists, Barney G. Glaser and Anselm L. Strauss, whose book, *The Discovery of Grounded Theory* (Glaser and Strauss 1967), was revolutionary in that it challenged the then dominant quantitative methods used in sociology research

²² The term ‘grounded’ refers to the close ties that the ‘discovered’ theory has with the data. The inductive-deductive reasoning used in grounded theory analysis helps to ensure that the theory is ‘grounded’ in the data (Bryant 2002). The term ‘theory’ is used to denote an “explanation that ‘systematically integrates various concepts through statements of relationship’ and thus explains a phenomenon” (Strauss and Corbin 1998, p.25).

(Charmaz 2000). Glaser and Strauss perceived an imbalance between theory verification and theory generation, with the former having “primacy on the current sociological scene” (Glaser and Strauss 1967, p.2), and felt that the desire to generate theory was considered secondary. They proposed that grounded theory, in particular the *constant comparative method of analysis*, would allow for the ‘discovery’ of theory rather than merely describing human processes and verifying existing theory. Charmaz argues that, through their approach, Glaser and Strauss strived to develop “explanatory theoretical frameworks, thereby providing abstract, conceptual understandings of the studied phenomena” (Charmaz 2006, p.6).

According to Bryant and Charmaz (2007) grounded theory is the most widely used, or more accurately widely *claimed*,²³ qualitative research methodology, and since its original conception, there has been much debate and confusion with regard to the theoretical perspectives taken and the methods employed (Locke 1996; Charmaz 2000; Allan 2003; Walker and Myrick 2006). Addressing the ambiguity of the term ‘grounded theory’, Bryant makes the distinction between the phrases ‘*grounded theory method*’ and ‘*grounded theory*’ (Bryant 2002a). He argues that while many researchers claim to use grounded theory *methods* of data analysis, their intention may not be to produce a grounded *theory*, which he views is a possible outcome of the method (Bryant 2002a). I partly agree with Bryant in that the early writings of Glaser and Strauss omitted any discussions on the philosophical and methodological underpinning of grounded theory, and focused on the different strategies or *methods* of analysis (Birks and Mills 2011). However, contemporary permutations of grounded theory which are explicit in their epistemological foundations, such as the constructivist grounded theory used in this research, move grounded theory to a methodology-methods ‘package’ (Birks and Mills 2011). In this thesis, grounded theory will be considered as a methodology-methods package, with the ‘contents’ of the package being the methods used to collect, handle and analyse data (such as coding, memo-writing and the constant comparative method of analysis), underpinned by the theoretical perspective of constructivism²⁴ (Charmaz 2006).

²³ With the growing use of grounded theory by researchers and a number of different permutations of the approach, many researchers *claim* to use grounded theory, but frequently on closer inspection only some features are employed (such as coding or the constant comparative method of analysis) (Cutcliffe 2005).

²⁴ The terms ‘constructivism’ and ‘constructionism’ are often employed inconsistently in the literature. In the context of this thesis, ‘constructivism’ refers to the cognitive processes by which an individual

The contrasting backgrounds of the originators are often claimed to have laid the philosophical roots of grounded theory (Bryant 2002a; Charmaz 2006; Babchuk 2009). Strauss was influenced by American Pragmatism, Symbolic Interactionism and also his work at the Chicago School of Social Research which placed an emphasis on qualitative research. Glaser's rigorous quantitative training at Columbia University represents the positivist leanings of early grounded theory²⁵ (Locke 1996). The theoretical position of pragmatism considers that by acting and interacting (often during a problematic situation), people can creatively develop knowledge of the world, which may be usable in practice (Corbin and Strauss 2008). Charmaz adds that pragmatism considers reality as "fluid" and open to multiple interpretations, and therefore pragmatists see truth as "relativistic and provisional" (Charmaz 2006, p.187). Symbolic interactionism refers to the premise that the process of human interaction provides the meanings for the experiences that individuals may have (Blumer 1986). The perspective that symbolic interactionism holds is that human behaviour is based upon the meaning that individuals place on symbols (people and things), and how such meaning is interpreted and communicated through language. Central to the theory of symbolic interactionism is that meaning is constructed through the interaction between people, rather than meaning being assumed or 'intrinsically emanating' from the symbol (Blumer 1986).

Together, the two philosophical perspectives of pragmatism and symbolic interactionism emphasise the key notion of grounded theory research, which is to develop new theory by exploring social *process* and *interaction*. In relation to this study, the emphasis that symbolic interactionism places on the shared construction of meaning is particularly relevant in facilitating an understanding of the approaches to practice and clinical decision-making from study participants' perspective. In practice, this meant that during interviews I was able to learn about the perspectives and experiences which underpinned *their* meaning rather than make my own assumptions about what they meant. This contributed to a rich and deep account of what participants

constructs meaning and knowledge through interacting with the external world. Whereas, as an epistemology, 'constructionism' maintains that knowledge is developed through social processes and that language constitutes, rather than, reflects reality (Young and Collin 2004).

²⁵ The philosophical perspectives of symbolic interactionism and positivism signify a coming together of two competing traditions in sociological research (Charmaz, 2006). This has been suggested as being largely responsible for the originators' separation in the 1980s. It is thought that the differences that emerged between Glaser and Strauss are symptomatic of the troubled marriage of assumptions that lie at the heart of grounded theory (Bryant 2002a).

were (or were not) saying, which could be compared to what other participants had said in previous and subsequent interviews.

Due to a diversity in methods adopted by researchers claiming to use grounded theory, and scholars re-directing and elaborating on the original works of Glaser and Strauss, Bryant and Charmaz suggest that grounded theory should be considered a “family of methods which bear family resemblances rather than as a distinct collection of methods which share clear and precise common attributes” (Bryant and Charmaz 2007, p.11). Charmaz (2006) summarises the defining characteristics of the grounded theory ‘family’, expanding upon the original offerings by Glaser and Strauss (1967), and these are illustrated in Table 5.1 below.

	Characteristic
1.	Simultaneous data collection and analysis
2.	Construction of codes and categories
3.	Using the constant comparative method
4.	Advancing theory development during each step of data collection and analysis
5.	Memo-writing
6.	Theoretical sampling
7.	Conducting a comprehensive literature review <i>after</i> data analysis

Table 5.1 Summary of the major defining characteristics of grounded theory (Charmaz 2006)

Since its conception in the 1960s, three major approaches to grounded theory have evolved, each with different philosophical underpinnings. These are: Glaser’s ‘Glaserian’ or ‘Classic’ grounded theory (Glaser 1978, 1992), underpinned by positivism; Strauss and Corbin’s pragmatic-symbolic interactionist approach to grounded theory (Corbin and Strauss 1990; Strauss and Corbin 1994; Corbin and Strauss 2008); and finally, Charmaz’s constructivist interpretation of grounded theory (Charmaz 2000, 2006). While all three schools of grounded theory (Glaser, Strauss and

Charmaz) may 'agree' that the characteristics illustrated in Table 5.1 are fundamental ingredients of grounded theory research, their different philosophical positions have resulted in variation in how the features are conceived and applied in practice. For example, there is wide variation in the descriptions of the coding processes used in grounded theory, and how the researcher 'discovers' or 'constructs' codes from data. Birks and Mills (2011) highlight that coding in grounded theory ranges from vague and ambiguous (Glaser and Strauss 1967), to elaborate and complicated (Strauss and Corbin 1990), and finally to coding which is open, flexible and more straightforward (Charmaz 2006).

This research adheres to all the defining characteristics summarised in Table 5.1 above; however, a broad and superficial literature review was conducted prior to data collection as part of the formalities of the PhD process. The literature critically reviewed in Chapters 3 and 4 was briefly consulted before the commencement of data analysis, in order to identify the research area and help develop the research questions and aims. Later on in the data collection process (from interview 7 onwards) the developing theory guided the engagement of the extant literature to facilitate my theoretical sensitivity.

Figure 5.1 overleaf, illustrates the essential methods of grounded theory (adapted from Birks and Mills 2011), demonstrating the overlap of data collection, coding, and interpretation which characterises the approach. Section 6.8 in the next chapter provides a diagrammatic account of how grounded theory was used specifically in this research.



Figure 5.1 The essential methods of grounded theory (adapted from Birks and Mills 2011)

As can be seen from Figure 5.1, a distinct feature of grounded theory is that data collection and analysis occur simultaneously, each informing and focusing the other throughout the research process. Employing such a concurrent process in this research meant that analysis commenced very early on, and the researcher scrutinised and subsequently allocated codes to the gathered data. From the beginning of data collection and analysis the researcher engaged in one of the defining analytical features of grounded theory, the *constant comparative method of analysis*²⁶ (Glaser and Strauss

²⁶ The constant comparative method of analysis is discussed in relation to this study, later on in Section 6.8.1.2.

1967). In practice, this meant that during interviews, what was said by participants was compared with what was said by other participants in previous and subsequent interviews. The analytical processes used in this study are presented fully in the next chapter, with examples of data analysis.

5.5.1 The grounded theory debate and its relation to this research

As much as the value of grounded theory has been recognised, so have its limitations. Methodological and philosophical aspects of grounded theory have come up against harsh criticism. Much of the criticism levelled at grounded theory centres on the role of the researcher and the assumptions grounded theory makes regarding cognition and knowledge. Numerous authors have pointed to the positivist leanings suggested in the early works of Glaser and Strauss (Charmaz 2000; Bryant 2002a; Bryant 2003; Charmaz 2006). Bryant in particular (Bryant 2002a; 2002b; 2003), has been strongly critical of the early grounded theory writings of Glaser and Strauss (Glaser and Strauss 1967) and the later works of Corbin and Strauss (Corbin and Strauss 1990; Strauss and Corbin 1994). One issue which is frequently seen as problematic by researchers using grounded theory is the treatment of the literature. The original grounded theory (Glaser and Strauss 1967), and later works by Glaser (1978, 1992), advocated being ‘theoretically sensitive’, by not entering the field with *a priori* knowledge, and not committing oneself exclusively to a specific preconceived theory (Glaser and Strauss 1967). Bryant strongly argues against the notion that the researcher’s previous ideas and knowledge can be “turned on and off like a tap” (Bryant 2003, p.3). Assuming that the theories, knowledge and experiences of the observer can be put aside to maintain theoretical sensitivity, this would place the researcher in a “totally neutral position” as a “dispassionate, passive observer” (Bryant 2003, p.3). However, I agree with other authors that the literature review at the beginning of the research needs to be minimal so as to enable the researcher to orientate themselves in the research field and identify and justify the research questions and aims (Birks and Mills 2011). I also concur with the notion that during the later stages of data analysis and theory development, steeping oneself in the literature and associated ideas may “sharpen’ the researcher’s nose” so that they will understand what the theory is about (Urquhart 2002, p.49) without forcing the literature on the developing theory (Glaser 2008).

My decision as to when and how to consult the extant literature was based on the regulations and expectations of the PhD programme on which I was enrolled, together with my own personal view. I was required to consult the literature early on in the research process, and during the development of a 'Research Plan Approval' document I had to outline the nature of the research area and justify the necessity for the study and its potential contribution to the knowledge base of osteopathy. This involved finding out what research had been carried out in osteopathy and other healthcare professions. Later on in the study, during the data analysis phase, specific literature was selected and consulted, in order to theoretically sensitise myself to concepts developing from the analysis.

An additional feature of grounded theory which is debated throughout the literature is the notion of *theoretical saturation* (Glaser and Strauss 1967). Glaser and Strauss used this term to describe the point in the research process where no additional data are being found which provides new theoretical insights. Considering the constructivist approach to grounded theory taken in this research, the term *theoretical sufficiency*, as offered by Dey (1999) and Charmaz (2006), fits better with the subjectivist epistemological position that this study assumes, as data serves to suggest categories rather than saturate them. Consistent with a subjectivist epistemology, aiming for theoretically sufficient categories meant I remained open to the multiple interpretations and meanings of data, and was less likely to prematurely close "analytical possibilities" (Charmaz 2006, p.115).

In summary, at the commencement of the research study, I familiarised myself with the three major schools of grounded theory (Glaserian, Pragmatist and Constructivist), and the merits and criticisms of each. As a result, I found Glaser's positivist interpretation of grounded theory (Glaser 1978, 1992) to be untenable given my interpretivist philosophical perspective (Section 5.4). Glaser's notion of theory *emerging* from data analysis (by way of a detached researcher/observer) was inconsistent with my view, that there were multiple truths and that realities were constructed and interpreted through and active an interactive process (Crotty 1998). The strong pragmatist and symbolic interactionist leanings of Strauss and Corbin's grounded theory approach (Strauss and Corbin 1990; Strauss and Corbin 1994), in particular their later writings (Corbin and Strauss 2008), appeared to have congruency with my relativist and subjectivist

positions. However, I found Strauss and Corbin's approach to be overly focused on the methods of analysis and coding, and that their version of grounded theory was complicated, prescriptive and disengaging, although I did find some limited use in employing aspects of Strauss and Corbin's (1990) 'coding paradigm' as an analytical tool during data analysis (discussed later in Section 6.8.2.4). Finally, I considered that Charmaz's constructivist interpretation of grounded theory (Charmaz 2000, 2006) was congruent with both my personal and the theoretical perspectives. This approach to grounded theory enables me to acknowledge the active role I played in constructing data and subsequently the substantive theory. The next section further details the rationale for selecting constructivist grounded theory research for this study.

5.5.2 Rationale for selecting constructivist grounded theory

Kathy Charmaz's constructivist approach to grounded theory has been a major redefining of grounded theory, occurring as a consequence of the philosophical issues directed at the earlier versions. Charmaz's contemporary approach to grounded theory aims to be more congruent with epistemological methodological developments over the past two decades (Charmaz 2000, 2006), and is the grounded theory approach taken in this research. Charmaz distinguishes between two different approaches to grounded theory; 'constructivist' and 'objectivist' (Charmaz 2000, 2006), and argues that the 'traditional' approaches, labelled 'Glaserian' or 'Classic' grounded theory, fall into the objectivist grounded theory category.

The major differences between constructivist and objectivist versions of grounded theory are summarised in Table 5.2 overleaf.

Version of grounded theory	Constructivist grounded theory (Annells 1996; Charmaz 2000; Clarke 2005; Charmaz 2006; Mills et al. 2006; Bryant and Charmaz 2007; Mills et al. 2007; Birks and Mills 2011)	Objectivist grounded theory (Glaser and Strauss 1967; Glaser 1978, 1992)
Research paradigm	Interpretive	Positivist/Post-positivist
Role of the researcher	Interactive, participatory and reflexive	Passive, objective and detached
Analysis	Codes and categories are actively <i>constructed</i> through an interpretive process	Codes, categories and patterns passively <i>emerge</i> from the data
View of theory	Theory is <i>constructed</i> and represents a re-construction of multiple realities	Theory is there to be <i>discovered</i> and represents the facts of a real and external reality

Table 5.2 Major differences between constructivist and objectivist grounded theory

According to Charmaz, objectivist grounded theory “accepts the positivistic assumption of an external world that can be described, analysed, explained and predicted” (Charmaz 2000, p.254). To take this objectivist approach to grounded theory would mean I would need to ‘get inside the heads of my participants and attempt to be as accurate, unobtrusive and detached as possible in order to know the *truth* of what the study participants meant during interviews. Taking an objectivist approach to grounded theory would be inadequate given my own subjectivist epistemology and personal view that clinical decision-making and practice is complex and involves multiple socially interactive processes.

In contrast, constructivist grounded theory recognises that the researcher co-creates the data and ensuing analysis through an interactive process, resulting in an “interpretative portrayal” (Charmaz 2006, p.10). In adopting a constructivist approach to grounded theory, I could explore different meanings and experiences of practice and clinical decision-making raised by participants, and I took the view that data did not provide a “window on reality” (Charmaz 2000, p.523).

In relation to this study, constructivist grounded theory offered a flexible research approach that would facilitate the development of a substantive theory²⁷ concerning osteopaths' clinical decision-making and therapeutic approaches, which would account for the multiple views, actions and realities of the research participants. Furthermore, in taking a constructivist approach to grounded theory it is acknowledged that the theory generated from this research cannot be taken to be a 'once-and-for-all' explanatory model of clinical decision-making and therapeutic approaches in osteopathy, but rather the findings are situated in time and culture (Burr 2003), meaning that alternate theories could be created from my data.

In summary, constructivist grounded theory, situated in the interpretive research paradigm, has been discussed in this section. Recognising the core assumptions, operating principles and the major developments of the method through time, allowed me to appreciate the strengths and limitations of grounded theory. Moreover, understanding the key differences and similarities between different interpretations of the grounded theory method enabled me to make an informed choice as to the most suitable variation to utilise in my research study.

Figure 5.2 overleaf, summarises the methodological decisions which underpin this study.

²⁷ Glaser and Strauss (1967) distinguish between two types of theory generated from grounded theory, 'Formal grounded theory' and 'Substantive grounded theory'. Formal grounded theory is developed to a higher level of conceptual abstraction, and encompasses concepts which span numerous substantive areas; whereas substantive grounded theory pertains to a specific phenomenon in a specific situation (Birks and Mills 2011). This research aims to generate a substantive grounded theory of the clinical decision-making and therapeutic approaches of experienced osteopaths in the UK.

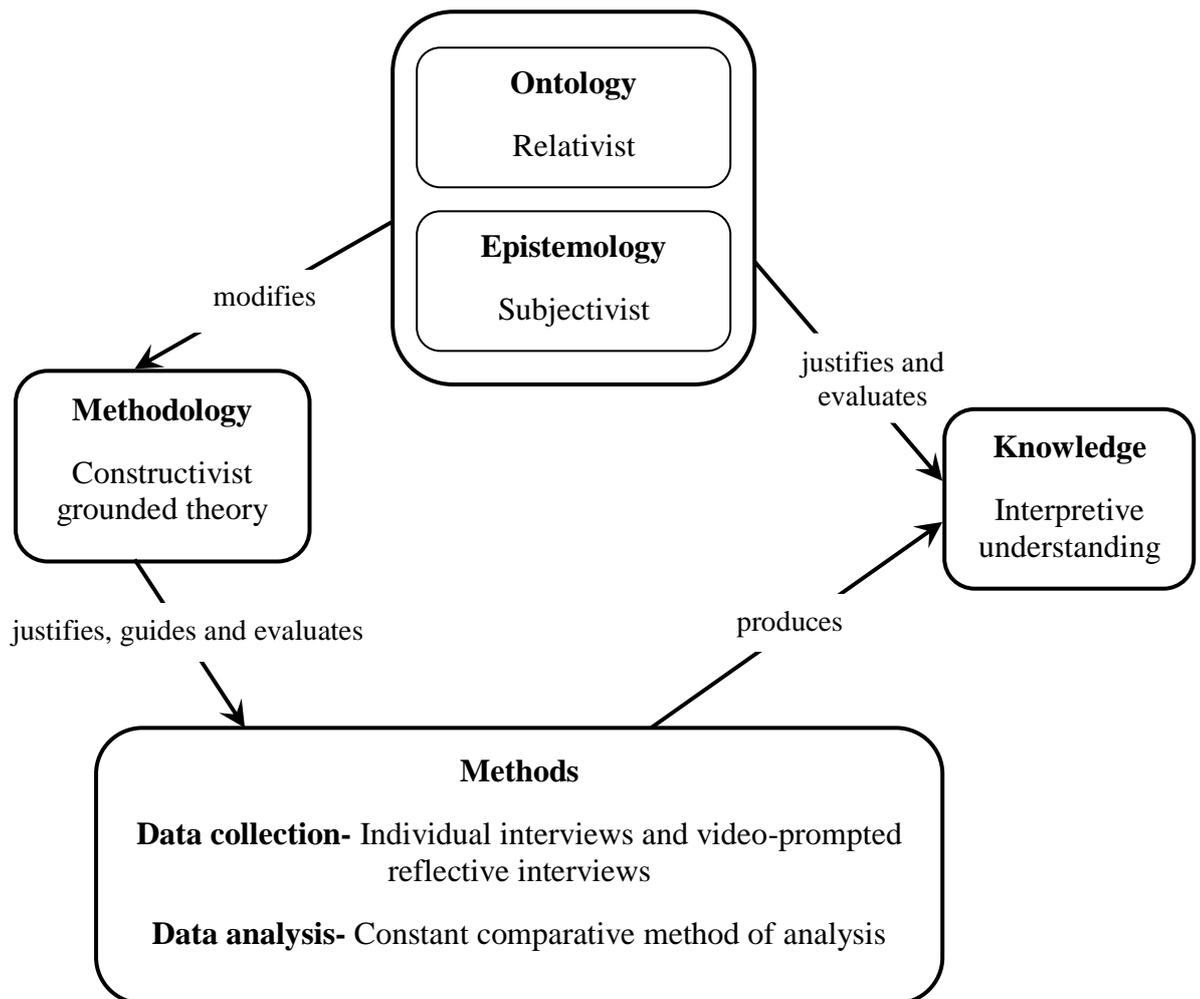


Figure 5.2 Summary of the methodological decisions and assumptions made in this study (adapted from Carter and Little 2007)

5.6 Insider research

As an osteopath investigating the clinical decision-making and therapeutic approaches of osteopaths, I can be said to be an ‘insider’ engaging and relating to information within a community of which I am a member (Brannick and Coghlan 2007). While I am an insider to my own knowledge and practice of osteopathy and the decision-making that I use with my own patients, I am at the same time an *outsider* to the truths and perceptions of other members of the osteopathic profession, with the majority of whom I have never met, and have no prior relationship. The insider-outsider position or practitioner-researcher position has both advantages and disadvantages (Jarvis 1999; Robson 2002; Shah 2004; Brannick and Coghlan 2007; Morse 2010) and these are discussed below in relation to this research study.

I entered the field having an insight, but carrying assumptions as to the nature of osteopathic practice and the processes of clinical decision-making. My previous knowledge and experiences provided me with opportunities that would have been missed by an ‘outsider’, and the procedures and processes of the osteopathic profession were familiar to me. For example, I knew of all the osteopathic educational institutions in the UK, I taught at four of the institutions, and I had friends and colleagues affiliated with several of the others. I was accustomed to the ‘sights and sounds’ of the osteopathic profession, its educational set-up, and clinical practice. Furthermore, being accustomed to the osteopathic and manual therapy literature increased my theoretical sensitivity and helped me interpret the data and link my findings with the extant literature (Morse 2010).

My analysis and discussion were constructed to include theory and terminology which may be considered to be important or relevant to the osteopathic profession, providing a degree of ‘accessibility’ to its members. From a technical standpoint, I was fluent in the language of osteopathy and manual therapy. This served as a double edge sword; during interviews I was able to recognise osteopathic ‘jargon’ and could draw on my own experiences in practice and teaching to delve deeply into concepts which surfaced during interviews, and facilitated the construction of rich data (Brannick and Coghlan 2007). Conversely, as an insider I entered the field lacking naivety, and the familiarity of aspects of the topic challenged me to ‘step outside’ so that I could explore the meaning of what was said and not take for granted routines, terminology and practices which needed to be questioned and explored.

My position as an insider and my very limited experience in qualitative research meant I initially found it difficult to ‘make the familiar strange’, to be able to view the data with ‘fresh eyes’. This was especially apparent during my second interview with a participant, who was a senior lecturer, clinical tutor and very experienced practitioner. During the interview I thought I was too agreeable and failed to chase up their terms and phrases, and I assumed meaning of what was said. Soon after this interview, I attended an interview workshop for doctoral researchers. Here, I further practised my interviewing approach and gained valuable feedback from other researchers. As a result, I was more confident in myself as a researcher, and felt more able to ask seemingly obvious questions, and not worry how trivial they might appear to the participant. This

process helped to take me further down the ‘road of researcher’ and away from the ‘path of practitioner’. My changing sense of who I was, was further facilitated by keeping a reflexive journal, which allowed me to question my assumptions and explore my values, and any aspects of the data that appeared ‘obvious’ or seemed initially to be ‘usual practice’. Logging my own assumptions, biases and ideas into the reflexive journal, required me to confront and explore my relationship with the data. Furthermore, the fact that data collection and analysis were occurring in tandem, and the use of the constant comparative method of analysis, meant that I actively questioned the data and compared stories and incidents which were both similar and different (Labaree 2002). This process moved me on analytically, and further facilitated the shift from practitioner to researcher.

During the first three interviews; I assumed meaning of what participants would say, failed to probe participants on what they did say, and with my own insight of clinical practice I unknowingly entered into mutual discussions on the subject. The reflexive journal allowed me to be introspective and reflexive on my underlying assumptions and ‘preunderstanding’, and facilitated a level of self-ignorance and ‘defamiliarisation’. In addition, during supervisory meetings my supervisors, who were not osteopaths, questioned and probed at my developing concepts and categories, and their outsider perspectives helped draw me over and above the data. This process of reflexive awareness (Brannick and Coghlan 2007) enabled me to take on new perspectives, and kept me focused on eliciting what participants *meant* during their interview. In taking a constructivist approach to interviewing, I recognised that the data generated during the interview was a co-constructed report which was both situational and contextual rather than a ‘truth’ that I was able to know (Mills et al. 2006). Exploring participants’ words, situations and events, allowed me to have a ‘textured’ and rich understanding of what was said (Charmaz 2006). Furthermore, inviting participants for a second interview enabled me to follow up concepts which were discussed during the first interview, and further explore the meaning of what participants said.

I am a relatively young and somewhat inexperienced osteopath, educator and researcher and the research process involved interviewing much more senior and experienced

osteopaths and exploring in detail their practice.²⁸ However, inviting ‘good informants’, who were willing and happy to share their views (Morse 1991), helped to manage this hierarchical difference. In addition, practising my interview technique and interview schedule with osteopathic friends who were not involved in the study, allowed me to reflect on my interview style to ensure that I took an *inquiring* but not *challenging* approach to interviewing participants.

5.7 Ensuring the quality of this research study

Qualitative researchers need to take measures to ensure and demonstrate the quality of their data and findings. However, the unique perspective and methodological approach that qualitative research adopts means that the ‘rules of rigour’ which are applied to quantitative studies, are inappropriate for qualitative methods (Sandelowski 1986, 1993). Moreover, researchers have yet to agree on common criteria for judging quality in qualitative research, which Rolfe argues is “symptomatic of an inability to identify a coherent qualitative research paradigm” (Rolfe 2006, p.308). The application of the term ‘*rigour*’ in qualitative research is much debated (Sandelowski 1986, 1993; Morse et al. 2002; Rolfe 2006). Some consider that ‘rigorous’ qualitative research simply means that the research is reliable and valid, and that therefore the criteria should apply to all types of research regardless of methodology (Davies and Dodd 2002). In support of this view, Morse and colleagues argue in favour of reliable and valid qualitative research, and that while the notion of rigour has a quantitative bias, they consider the concepts of reliability and validity as “overarching constructs” which can be appropriately used in “all scientific paradigms” (Morse et al. 2002, p.19). Others contend that strongly implementing criteria for rigour will stifle the creativity of qualitative research. For example, Whittemore (2001) argues that while there is tension between rigour and creativity, “some kind of validity criteria and some methodological or technical procedures are essential to guard against the investigator’s conjuring up concepts and theories that do not authentically represent the phenomenon of concern” (Whittemore et al. 2001, p.526). These views illustrate the fine balance between rigour and creativity.

²⁸ The researcher-participant relationship is explored later, in Section 6.5.

With regard to this research, the originators of grounded theory developed their own criteria to assess the quality of a grounded theory study (Glaser and Strauss 1967). However, the positivistic assumptions of the traditional grounded theory mean that these criteria do not lend themselves to the constructivist approach taken in this study. More suitable to this interpretive research is the concept of ‘trustworthiness’, which Rolfe (2006) argues moves the responsibility for judging the quality of the research from the producer to the reader. Trustworthiness encompasses ‘credibility’, ‘transferability’, ‘dependability’ and ‘confirmability’ which are used to replace the criteria of rigour in the positivist paradigm of internal and external validity, reliability and objectivity (Lincoln and Guba 1985). Each of the criteria of trustworthiness are discussed in relation to this research below.

5.7.1 Credibility

The criterion of credibility aims to provide confidence that the research has obtained an appropriate interpretation of the meaning of the data which reflects the experience and views of participants (Whittemore et al. 2001). In this study several efforts were made to ensure the credibility of the research data. A prolonged engagement with the data and repeated interactions and interviews with participants contribute to the credibility of this research (Lincoln and Guba 1985). During data collection, I actively sought to develop a trustful researcher-participant relationship, which facilitated the sharing of participants’ rich details of their clinical decision-making and practice, which I could explore further through questioning. Additionally, throughout the research process I practised as an osteopath and worked as clinical tutor, and it could be said I was at the ‘coal face’ of osteopathy and immersed within the field of clinical decision-making and practice. This insider position provided opportunities for me to informally verify, test and check my theoretical insights as they developed during data analysis.

A process of ‘member checking’ (Bryman 2008b) was used once the interviews had been fully transcribed. Participants were asked to read through the interview transcript to confirm that it represented an accurate account of what was said, and were encouraged to add any further comments that they felt necessary. During this process, two participants (participants 8 and 9) took the opportunity to add further comments to their interview transcript. As a result of theoretical sampling, the developing theory was

shared and checked with specific participants thereby providing an opportunity for further theory development.

Peer debriefing provided another method of establishing the credibility of this research (Lincoln and Guba 1985). Written feedback from the peer review process following the submission of sections of this thesis to research journals^{29,30} was useful in questioning my values and assumptions about clinical decision-making and qualitative research. Not being affiliated with the study, allowed reviewers to act as ‘devil’s advocate’, by being critical and challenging the assumptions expressed in my papers. This helped inform my thinking, both methodologically and analytically. For example, during the peer review process of one paper I was challenged on how I viewed the osteopathic principles in relation to clinical decision-making. This experience made me further aware of my own assumptions about the research area, and caused me to closely examine them.

During supervisory meetings, critical feedback on my interpretations of selected passages provided guidance and searching questions to help refine the analysis and developing theory. While it has been argued that research supervisors do not provide a dispassionate examination of the study (Holloway 1997), their knowledge of qualitative research and the field of clinical reasoning, combined with their substantial clinical experience added to the credibility of the research. At various points in the study, the findings and developing theory were presented formally at conferences^{31,32} providing some valuable critical feedback and enabling me to further reflect upon and examine my theoretical thoughts.

Qualitative researchers should disclose their assumptions, biases and beliefs, and how they may have shaped the research findings (Creswell and Miller 2000). From the time of commencing the PhD study, and throughout the data collection and analysis period, I maintained a reflexive diary, and wrote copious field notes and memos. These methods

²⁹ Thomson, O.P., N.J. Petty and A.P. Moore (2011). Clinical reasoning in osteopathy - More than just principles? *International Journal of Osteopathic Medicine* 14(2): 71-76.

³⁰ Thomson, O.P., N.J. Petty, C.M. Ramage and A. P. Moore (2011). Qualitative research: Exploring the multiple perspectives of osteopathy. *International Journal of Osteopathic Medicine* 14(3): 116-124.

³¹ Thomson, O.P., N.J. Petty and A.P. Moore Approaches to clinical reasoning in osteopathy. *The 9th International Conference of Advances in Osteopathic Research*, London, UK, 15th September 2012.

³² Thomson O.P. Clinical reasoning and therapeutic approaches in osteopathy. *Faculty CPD Conference*, Victoria University, Melbourne, Australia, 30th January 2013.

of reflexivity enabled me to put in writing any feelings or thoughts that arose and to document any occurrences during the course of the study. Making my presuppositions explicit in this way, meant I could test out and check any assumptions and analytical thoughts I had, with the data (Cutcliffe 2003).

5.7.2 Transferability

Transferability is the extent to which the ideas generated may be applied to other populations or situations, and may be considered the *theoretical generalisability* of the findings (Bryman 2008b). During interviews, one of my objectives was to obtain what are known as “thick descriptions”; that is, data which is “deep, dense and detailed” (Denzin 1989, p.83). Furthermore, in Chapter 7, the findings are presented as rich, detailed and contextualised accounts of participants’ views and experiences of clinical decision-making and practice. Providing such rich descriptions will allow the reader to judge whether theoretical concepts of the research findings might be transferable to other people in other settings, while also evaluating the quality of the research. For example, the extent to which the findings of this research study are transferable to osteopaths outside the UK or to osteopaths with different levels of expertise can be judged by the reader. Furthermore, during the course of this research, the findings were presented at both research and CPD conferences in the UK³³ and Australia,³⁴ which assisted in assessing the transferability of the study’s findings.

5.7.3 Dependability and confirmability

Dependability refers to the extent to which the reader can evaluate how the findings of the study were achieved and the degree of consistency of the researcher’s data analysis and decision-making (Holloway and Wheeler 2010). Confirmability refers to the degree to which the findings relate to the data and offer a faithful interpretation of the view held by the participants, and are not a reproduction of the views, assumptions and beliefs of the researcher (Lincoln and Guba 1985). An audit trail (Lincoln and Guba 1985) increased the dependability and confirmability of the study so that readers can follow and judge the research process. In this study, the audit trail consisted of records from all phases of the research processes, and documented how the theory was

³³ Thomson O.P, Petty N.J and Moore A.P. Approaches to clinical reasoning in osteopathy. *The 9th International Conference of Advances in Osteopathic Research*, London, UK, 15th September 2012.

³⁴ Thomson O.P. Clinical reasoning and therapeutic approaches in osteopathy. *Faculty CPD Conference*, Victoria University, Melbourne, Australia, 30th January 2013.

constructed from the data. By detailing the methods used to collect, handle and analyse data, and the process used to construct the explanatory theory, it serves as an audit trail to enhance the dependability and confirmability of this study. The writing of memos, interview transcripts, interview notes, interview guides and regular logs into a research diary all provided a 'trail of evidence', documenting each stage of the inquiry process. Moreover, pilot-testing interview techniques, critical self-reflection and feedback from supervisors in conjunction with a reflexive research diary have attempted to increase my proficiency in data collection and analysis, and in doing so have contributed to the quality of this research. The next chapter provides descriptions and examples of data collection and analysis, which serve as part of the audit trail of the procedures and processes carried out in this research.

5.8 Chapter conclusion

The methodological decisions taken in this study have been discussed in this chapter. It discusses the choice of qualitative research in light of the research questions and the field of clinical reasoning. The chapter aims to explain and justify the decision to locate this research in the interpretivist paradigm, adopting a relativist ontology and subjectivist epistemology. The research methodology used is theory-generating constructivist grounded theory, of which the researcher is considered an insider to the phenomena under exploration. The measures taken to ensure that this study is trustworthy were also discussed. The next chapter details the methods used to collect and analyse data and how these analytical processes led to the findings of this research study.

Chapter 6: Methods

6.1 Introduction

This chapter discusses the methods used in this study to gather data and derive meaning from these data through analysis, in line with iterative nature of grounded theory research. By providing an explicit account of the methods employed in this study, to construct the substantive theory, this chapter serves as an audit trail, thereby increasing the dependability and confirmability of the study. The chapter begins by detailing the strategies used to access, recruit and sample participants for this research. It continues by presenting the ethical considerations relevant to this research and explains how such issues were managed. Finally, the processes of data collection and analysis are presented in detail.

6.2 Recruitment of participants

For this research study participants were recruited in two phases representing the two methods of data collection; individual interviews and clinical observation followed by a video-prompted reflective interview. These recruitment strategies are discussed below.

6.2.1 Recruitment of participants - Individual interviews

Practitioners were invited to participate from all nine OEIs throughout the UK,³⁵ In order to gain access to potential participants, an initial telephone call was made to the relevant managers of the clinical departments of suitable OEIs to introduce myself and outline the purpose and nature of the study. This initial phone call allowed me to establish the most convenient method of communication and then obtain a verbal agreement for a follow up email or letter outlining the study in more detail (Appendix 2).

³⁵ At the time of recruitment there were nine suitable OEIs (Section 2.5), however, at the time of writing this thesis Swansea University now offer an osteopathy programme recognised by the GOsC. There are currently eleven UK OEIs, however, ten institutions offer undergraduate osteopathic courses, and one offers a postgraduate course for trained medical doctors only, and was not invited to participate as they represent a fraction of the profession and would have different models of practice.

The clinic managers³⁶ of nine OEIs willing to participate were asked to inform all clinical staff (for example, during staff meetings) about the study and to provide clinical tutors with my contact details. A poster outlining the study and contact details was displayed in the staff common rooms of all participating OEIs (Appendix 3). From these methods, interested staff members contacted me directly if they were interested in participating in the research.

At the time at which the practitioner contacted me, it was necessary to obtain details of their practice backgrounds by providing them with a 'participant biographical profile form' (Appendix 4). This would help with the initial process of purposeful sampling, and also the process of theoretical sampling later on in the study (discussed later in Section 6.3). The biographical profile form was vital in obtaining the details of participants' approach to their practice (such as specialist interests, particular philosophy), years in practice, clinical and teaching posts held, and the OEI which they graduated from. A short list of those interested and eligible to participate was created, and from this list I purposively sampled participants fulfilling the inclusion criteria. Participants that met the criteria were sent an introductory email (Appendix 5), with a participant information sheet, outlining the nature of the study and what would be involved (Appendix 6). Also enclosed was a consent form (Appendix 7) which the participants were invited to sign (having read the information sheet) and bring with them on the day of the interview. During the initial contact, participants were asked to nominate a suitable day for the interview to take place. All interviews were conducted at the participant's work place (private clinic or OEI) in a quiet room, at a time which was most convenient for them.

6.2.1.1 Inclusion criteria

Osteopaths registered with the GOsC were invited to take part in the study. For the initial purposive sample for individual interviews, practitioners had a minimum of five years' experience in clinical practice, and were currently practicing a minimum of two days per week. Clinic tutors who were also in practice were sampled as it was felt that

³⁶ Clinic managers acted as the 'gatekeepers' of potential participants. Once their permission was sought they were able to assist in the recruitment without the element of coercion. Their role was to inform all clinic tutors of my study by informing them directly (by circulating an electronic copy of the recruitment poster via email) and a more general strategy of placing the poster in and around areas of the OEI where clinic staff convened.

these individuals were more likely to possess the repertoire of language to effectively communicate and explicate aspects of their clinical practice and decision-making processes (Loftus and Higgs 2008).

6.2.1.2 Exclusion criteria

Registered osteopaths working within the National Health Service (NHS) were not invited to participate, as these practitioners represent a very small part of the profession (General Osteopathic Council 2012b). Additionally, practitioners working within the NHS were likely to have quite different models of practice (Foster et al. 1999) reflecting the possible challenges and extra professional support offered by working in a large organisation such as the NHS (Pincus et al. 2006). However those practitioners who had primary care trust contracts, within their private practice setting, were included in the study.

6.2.2 Recruitment - Clinical observation and video-prompted reflective interviews

Three recruitment strategies were devised which would enable participants to opt in if they were interested in participating in clinical observations and video-prompted reflective interviews, thereby minimising the potential for coercion.

The procedures and processes of recruitment are described below in the following order.

1. Osteopathic educational institutions (OEIs)
2. The National Council for Osteopathic Research (NCOR) research ‘hubs’
3. Recruitment adverts in the osteopathic press

6.2.2.1 Osteopathic educational institutions

This process followed the same procedures as the recruitment strategy for individual interviews (Section 6.2.1). I firstly telephoned the relevant managers of the clinical departments of all nine OEIs to introduce myself, and outline the purpose of the study. This initial phone call allowed me to obtain a verbal agreement for a follow-up email or letter which provided a more detailed description of the study (Appendix 8). The clinic managers were asked to inform all clinical tutors about the project and provide them with my contact details. A poster (Appendix 9) outlining the study and contact details were displayed in the staff common rooms. From these methods, interested staff

members were encouraged to contact me directly if they wished to participate in the research.

6.2.2.2 NCOR research hubs

The NCOR research hubs are a network of groups of osteopaths, throughout the UK, with an interest in osteopathic research. It was felt the UK wide geographical spread of the NCOR hubs would offer the chance to recruit a broad range of osteopaths from around the UK. Furthermore, as osteopaths belonging to the NCOR hubs had an interest in research, it was anticipated that they would be more interested and willing to participate in this study. I telephoned the NCOR research officer and asked them to inform (via email) the research hubs and their members about the project and to provide members with my contact details. A poster outlining the study and contact details (Appendix 9) was also provided to the NCOR research officer who circulated it throughout the hubs via email. This recruitment advert was also published in the NCOR section of the osteopathic profession's magazine '*The Osteopath*'. From these methods, interested practitioners contacted me directly if they wished to participate in the research.³⁷

6.2.2.3 Osteopathic press

The final recruitment strategy involved an advertisement in the national osteopathic press (Appendix 9). Two magazines, '*The Osteopath*' and '*Osteopathy Today*' are distributed quarterly to all UK registered osteopaths and those practitioners who are members of the British Osteopathic Association respectively. As with the NCOR recruitment process, interested practitioners were invited to contact me directly if they wished to participate in the research. Using the national osteopathic press, I could cast my 'recruitment net' to all corners of the UK, which was important to obtain as wide a range of backgrounds, perspectives and experiences as possible. In practice, this recruitment approach proved to generate the greatest amount of interest from the osteopathic profession.

³⁷ Whilst I thought that the NCOR hubs would be a good source of potential participants, it proved not to be. No practitioners from the NCOR hubs contacted me to express an interest in participating in the study.

6.2.2.4 Inclusion and exclusion criteria

The inclusion and exclusion criteria for clinical observations and video-prompted reflective interviews remained largely the same as the individual interviews (Sections 6.2.1.1 and 6.2.1.2), with the exception of two alterations which resulted in a widening of the inclusion criteria. Firstly, practicing osteopaths, registered with the GOsC who were not involved in osteopathic education were invited to participate in the study. Secondly, newly qualified practitioners were also invited to participate,³⁸ and as with the individual interviews, all participants were required to be in practice a minimum of two days per week.

In summary, all recruitment procedures provided potential participants, the choice of opting in, and aimed to eliminate the possibility of participant coercion. At the time at which the practitioners contacted me (either from the OEIs, NCOR hubs or osteopathic press), it was established whether or not they met the inclusion and exclusion criteria. Lists of those interested and eligible to participate was created, and from these lists, I purposively sampled (and later theoretically sampled) participants fulfilling the inclusion criteria. Participants that met the criteria were sent an introductory letter (Appendix 5) outlining the nature of the study, a participant information sheet (Appendices 6 and 10) a consent form (Appendices 7 and 11), which they were asked to sign and bring with them on the day, a biographical form (Appendix 4) and in the case of clinical observations, information on the process of informing patients and seeking their permission (Appendix 12). Practitioners that expressed an interest in participating were contacted (via phone or email) and a suitable time for observation, video-recording and interview arranged.

6.3 Sampling procedures

This study employed two sampling approaches, which are considered as fundamental features of grounded theory research, namely purposive sampling and theoretical sampling (Charmaz 2006). The nature of these sampling approaches and how they were used in this research is described in the following sections.

³⁸ In the original ethical application post-qualification was set to a minimum of five years. However, it was thought that reducing the years of post qualification experience, would increase the number of potential participants and that the data generated from newly qualified practitioners may provide a significant and useful contrast to the data from the experienced participants.

6.3.1 Purposive sampling

Purposive sampling may be defined as the “intentional selection of information-rich cases whose study will illuminate the central questions of the research” (Patton 2002, p.230). When deciding on the nature of the initial purposive sample of osteopaths, the main aims of the study was brought to the forefront of my mind. As can be seen in Chapter 4, a large proportion of the existing research literature has compared the clinical reasoning of novice and expert healthcare professionals, and I considered whether this study should follow in the same theme. However, with virtually no existing research into the clinical decision-making and therapeutic approaches of osteopaths, it was felt that the initial purposive sample needed to reflect the important focus of this study in producing a ‘starting model’ to help explore and understand these aspects in the contexts of osteopathy. In the future, the substantive theory could be tested, expanded and explored further by conducting research to examine specific aspects, such as expert-novice differences and the development of osteopathic expertise. In recognising the importance of communication in teaching and researching clinical reasoning (Ajjawi and Higgs 2008), purposively sampling osteopaths who could effectively communicate and verbalise their clinical reasoning processes was thought to be vital to obtaining rich data, allowing ‘thick’ descriptions, which was critical in facilitating the credibility and theoretical transferability of the research findings (Lincoln and Guba 1985). Therefore experienced osteopaths who were also clinical tutors were initially invited to participate in the study.

As discussed previously in Section 4.6.8, research conducted by a range of healthcare professions have resulted in a number of criteria for expertise being proposed, such as peer recognition, academic qualification, holding a senior position, the number years in practice and clinical outcomes (May and Dennis 1991; Benner et al. 1992; Jensen et al. 1992; Resnik and Jensen 2003; Edwards et al. 2004a). However, no such criteria have been put forward for osteopathy and it was unclear how these criteria would translate to the osteopathic profession. With this in mind, purposive sampling was initially used to select osteopaths, with a minimum of five years in clinical practice (and were currently practicing a minimum of two days per week), and with a minimum of two years’ experience in osteopathic clinical education from one of the OEIs throughout the UK. It was felt that sampling clinic tutors as the initial purposeful sample was in accordance with the qualitative sampling principle of ‘appropriateness’, meaning that participants

were able to meet the informational needs of the study, and were “good informants” (those who were considered to be articulate, reflective, and willing to share with the interviewer) (Morse 1991, p.127). The first nine participants were selected purposefully as they met the inclusion criteria, were willing to participate in the study and would be a starting point to explore their perspectives and processes of clinical practice and decision-making.

6.3.2 Theoretical sampling

Theoretical sampling is the process of data collection whereby the researcher collects pertinent data to develop the evolving theory, and is considered as a key component of grounded theory research (Charmaz 2006). After one interview with each of the nine participants, theoretical sampling involved returning to three participants (participants 6, 7 and 8), each of which appeared to exhibit strong characteristics of the three ‘therapeutic approaches’ which were constructed as a result of analysis of data generated from the first nine interview. When using theoretical sampling I had not only to decide *what* data to collect and *who* from, but I had to also consider *how* I was going to generate data which would move the theory towards theoretical sufficiency (Birks and Mills 2011). With this in mind, theoretical sampling also involved the decision to use the data collection methods of clinical observations and video-prompted reflective interviews with participants 10, 11 and 12) to help generate a form of data which the individual interviews alone could not. Finally, towards the latter stages of the study I theoretically sampled participants 1 and 10 for a second interview to confirm and explore the core category whilst broadening the scope the developing theory (Cutcliffe 2000). For example, the final interviews with these two participants generated further data which confirmed the significance and developed the relationship between conceptions of practice and approaches to decision-making.

6.4 Data collection

In this research, two methods of data collection were employed; individual interviews and non-participant observation followed by a video-prompted reflective interview. These data collection methods and procedures are discussed overleaf.

6.4.1 Individual interviews

Using grounded theory situated within the interpretive paradigm meant I had to enter the research participant's world and explore their personal meaning (Charmaz 2006). Semi-structured interviews would seek to obtain detailed descriptions of the experiences and views of participants with "respect to interpreting the meaning of the described phenomenon" (Kvale 2007, p.51). This style of interviewing would maintain an 'openness' and 'flexibility' to the interview, while still allowing to focus on the topic areas to be covered and the lines of inquiry to be pursued (Holloway and Wheeler 2002). Charmaz considers that this type of "intensive" interviewing to fit especially well with a grounded theory approach, as it is "open-ended yet directed, shaped yet emergent, and paced yet flexible" (Charmaz 2006, p.28). During data collection, this form of interviewing facilitated me to further pursue and explore ideas and concepts that developed during the interview, meaning that the interview guide varied between participants and interviews. Examples of Interview guides are presented later in Section 6.8.

6.4.1.1 Individual interview procedure

In accordance with Kvale (2007), each interview began with a *briefing*, in which I defined the topic under discussion and re-iterated to the participant the purpose of the interview and why they had been invited to participate. During the briefing I reminded the participant that the interview would be audio recorded, and that at any time they were free to stop the interview, without providing a reason. Importantly, it was emphasised that there were no right or wrong answers, and that the participants were the 'expert' of their own clinical practice and decision-making. At the end of each interview, a period of approximately ten minutes was put aside so that participants could be *debriefed* (Kvale 2007). The debriefing period provided an added moment of reflection for both the participant and the researcher, and it involved the participant being asked if they had anything more to say, and how they found the interview experience. During this debriefing period, several participants commented that they found reflecting on their practice during the interviews a useful and enjoyable process, and many participants commented that they were asked to discuss aspects of their practice which 'they had never really thought about in such detail'. The participants were further reminded that their interview recording would be fully transcribed, and

sent back to them via email, for checking (within seven days), and that they were would be invited to add any further comments if they so wished (Appendix 13).

During the debriefing period, participants' were reminded that only I and the supervisory team would have access to the interview data. At the conclusion of the interview, participants were also asked of their wish and permission to be contacted via email, for further interviews (if necessary), and they were informed that the decision was entirely up to them and that they were under no obligation. Before commencing each subsequent interview, participants were again provided with an information sheet to read, and it was at this point that they gave written consent if they were happy to participate.

My background knowledge and familiarity of osteopathic practice were considered when organising the structure and content of the interview guide. The interview questions needed to get *behind* and *underneath* the day-to-day practice of participants, and explore the assumed meanings of what was said (Charmaz 2006). During my transition from practitioner to researcher, exploring issues in this way during interviews was challenging, particularly during the first three interviews, when I was in the midst of this transition. I learnt not to take anything at face value, and as a researcher, adopt a default position of ignorance and unfamiliarity during interviews. For example, from my own clinical practice, I was familiar with specific aspects of osteopathic practice, such as examining and assessing patients. I learnt that by exploring participants' experiences and views on these issues during interviews, I could begin to 'see' the variation in practice approaches, and I used probing question to delve into these issues more deeply. Constantly writing analytical memos and regularly logging into my reflexive journal, pushed me to persistently ask questions of every day concepts of practice, such as 'treating' or 'communicating', helping me through the transition from practitioner to researcher.

An interview guide, rather than a script or schedule, was used to direct the discussion towards areas pertaining to the research questions and aims. Although clinical decision-making and practice was the focus of all the interviews, the interview guide varied between interviews, and was driven by the data analysis and the concepts that developed from previous interviews. Using a constructivist grounded theorist approach meant I

paid close attention to participants' definitions of terms and the context in which the terms were expressed (Mills et al. 2006). In practical terms, this involved exploring the meaning of often implicit statements or descriptions of actions, which participants took-for-granted as every day practice. When participants were sharing their experiences and perspectives of their practice, I would re-use their own language and terminology, which I would then further explore through deeper questioning.

Kvale (2007) suggests that when interviewing, a researcher must consider the 'thematics' and the 'dynamics' of the interview questions. *Thematically* evaluating a question meant the consideration of theoretical conceptions of the research topic, for example, the clinical reasoning and clinical procedures used during the diagnostic process. During the latter stages of an interview, I followed Kvale's concept of 'pushing forward' to further clarify and probe the meanings and of the answers to the question themes (Kvale 2007). *Dynamically*, the questions attempted to keep an easy flow of conversation. As a practitioner, the 'language' of osteopathy was accessible to me as well as the participants; however as a researcher I was committed to exploring the every-day terms and expressions of osteopathic practice, and I constantly asked participants to provide further details (and examples) of what they meant when they used common clinical and osteopathic terms. Using an open-ended questioning approach helped guard against the 'forcing of data' into predetermined categories, and helped to ensure that I asked questions which were focused and significant, yet allowed the participant to freely express their views (Charmaz 2006).

My own knowledge and experience of osteopathic practice, review of the existing literature, and discussions from my supervisors informed the initial and ongoing interview guide.³⁹ During the course of the interview I explored participants' answers further, not only to clarify meanings of the terms they used, but also to explicate more fully the often-hidden aspects and details of their clinical reasoning and practice. As suggested by Kvale (2007), follow-up questions were employed, and body language strategies such as a nod or an 'mm' were implemented to encourage the participant to further elaborate on their answers. Probing questions were used to gain specific examples and to add context and richness to the interview.

³⁹ Further development and 'fine-tuning' of the initial interview guide was developed from trialling different interview questions and styles with friends.

All interviews occurred in a previously arranged quiet, private room, at the OEI or practice at which the participant worked, with refreshment provided by the researcher. The interview space was arranged so that the participant was seated across from me, at the same height, on either side of a corner of a desk/table. The digital recorder⁴⁰ was placed between the interviewer and participant, in view to both individuals. I was aware of the possibility of an ‘interviewer effect’ (Holloway and Wheeler 2002), in that participants would discuss ‘textbook’ clinical decision-making, and present the way in which they practised osteopathy in a positive light, rather than discussing aspects of their *actual* clinical decision-making and practice. Holloway and Wheeler (2002) suggest to minimise this effect, the interviewer should spend time with the participant, to gain their trust and to help develop the participant-research relationship. This was facilitated by using the first quarter of the interview to have an open discussion of osteopathy, such as what made them decide to become an osteopath and their practice background. These introductory interview questions were important to help enable the participant to feel relaxed and used to the interview process. The introductory questions were also important in facilitating a trustful relationship with participants, so that they would feel comfortable in sharing specific details of their clinical practice.

Immediately after each interview, away from participants, I took field notes which recorded non-verbal cues (such as body language, tone of voice), along with thoughts, insights and reflections of the interview, as they developed. A reflective summary was completed following each interview, and examples are provided in Table 6.1 overleaf. The reflective questions were adapted from the literature (Miles and Huberman 1994).

⁴⁰ An Olympus WS-321M digital audio-recording device was used.

Reflective question	Comment	Future action
<i>What are the pre-interview goals?</i>	Explore and test concepts- Osteopath-patient relationship Meaning of safety Role/meaning of ‘diagnosis’ Meaning of examination procedures (observation, palpation, tissues)	Continue data collection
<i>What were the main issues or themes that struck me in this interview?</i>	Intuition? Visualisation, he found it difficult to verbalise, tacit knowledge? He used hands to almost ‘show’ what/how he’d do an examination.	Explore underlying meaning of “visualising”, its significance and what is behind it, with other participants. Return to existing data collected.
<i>Anything else that struck me as salient, interesting, illuminating or important?</i>	Unilateral in decision making? Wants to inform patient to help themselves. Trusts hands more than head?	Check with other participants
<i>Anything of interviewee relevant: environment, non-verbal behaviour, discomfort with any topic, emotional responses, impact of researcher?</i>	Was perhaps less comfortable than others, in that he found it more difficult to explain some aspects of his practice. Frequent gesturing of hands to ‘show’ how he moves and examines the patient.	Is this related to the number of years in practice? Consider interviewing less experienced osteopaths.

Table 6.1 Reflective summary of an interview

6.4.2 Non-participant observation and video-prompted reflective interview

I decided to use video as a reflective modality to prompt participants during the interview after the clinical observation, rather than as a source of data to be analysed. Using the video-recording in this way would enable participants be able articulate the connections between their knowledge and action (Haw and Hadfield 2011), which was proving difficult to access through interviews alone. Video facilitated participants to apply their memory during interviews so they could engage in deeper reflective acts (Haw and Hadfield 2011). Real-world clinical practice involves participants acting and interacting with their patients, and the use of video could capture the often rapid and subtle moment-to-moment decision-making (Jensen et al. 2000).

The data collected from the individual interviews suggested that clinical decision-making was embedded in practice and occurred within the context of the complex osteopath-patient interaction. It was thought that observation and video-recording could generate context- and situation-specific data (Haw and Hadfield 2011). Observing and video-recording osteopaths in their natural setting enabled me to ‘see’ the developing ‘theory in-action’ and highlight the similarities and differences compared with the ‘espoused theory’, developed from individual interviews (Argyris and Schön 1974). Comparing data with data in this way, was an essential part of the constant comparative method of analysis (discussed later in Section 6.8.1.2) (Charmaz 2006), and was crucial in developing the substantive theory and facilitated the theoretical sufficiency of major categories and the relationships between them.

The initial intention was to observe and video-record one initial consultation of a new, previously unseen patient and one follow-up appointment of the same patient, so that participants’ clinical practice could be viewed in the context of the developing relationship with their patient. However, recruitment challenges meant that this was not possible and only three participants were recruited for this part of the study. Two of the three participants were observed during a consultation with a returning (participants 10 and 12), whilst one participant was observed during the consultation of a new previously unseen patient (participant 11).

During the clinical observations I primarily took the role of non-participant observer, and I attempted to remain as unobtrusive as possible. However, as all the observation sessions occurred in relatively small clinical rooms, it was possible that participants and patients were conscious of my presence, and I acknowledged that this was a limitation of the method. I was also aware that as a researcher and osteopath, participants may have altered their actions with patients, especially if they perceived there to be any power relations between themselves and me. However, there were no previous existing power relations, and all participants appeared relatively comfortable with my presence.⁴¹

⁴¹ All student osteopaths undergo between two-three years of supervised practice which requires observation by peers and clinical tutors. My impression during observations and with discussions with participants afterwards, was that after five or ten minutes, participants got into their usual ‘groove’ with patients, and my presence was less felt.

6.4.2.1 Observation and video-recording procedure

All clinical observations occurred in the participant's private practice at a time and date which was convenient to them. I arrived fifteen minutes before the appointment to discuss with the participant where to place the camera in order to select an angle that enabled me to capture all the activities and interactions that might potentially occur during the patient-practitioner encounter. The camera used was an Apple iPad, which was left stationary in the setting to ensure that the participants were not distracted by the recording equipment.

During the clinical observation session I made field notes of important instances and moments during the session which I could explore during the reflective interview. To assist me, an observation guide was developed, which was informed by the data collection and analysis of the individual interviews previously. An example of an observation guide used during this study is provided later, in Table 6.11 in Section 6.8.2.

6.4.2.2 Video-prompted reflective interview procedure

The video-prompted reflective interview occurred immediately after the clinical observation and followed a similar process to that of the individual interviews detailed in Section 6.4.1. The participant was briefed, and it was again stressed that the interview would be audio-recorded, and that at any time the participant was free to stop the interview, without providing a reason. In order to lessen the participant's level of self-consciousness when viewing the video, it was important at this point to reassure participants that I was in no way critically evaluating or judging their performance. However, participants tended to make light hearted comments about how they appeared on camera, rather than them actually criticising their clinical performance.⁴²

The interview guide combined with the field notes taken during the period of observation served to help direct the interview and focus on specific aspects which had developed from prior data analysis. While the video-recording served to prompt the

⁴² These comments served to break the ice and helped to develop trust and rapport with interview participants.

participant, the interview and observation guides helped to prompt me.⁴³ Following the briefing, the video-prompted reflective interview proceeded in the following way:

- The video-recording was watched⁴⁴ with participants, and at times they were encouraged with nondirective verbal prompts and questions from the interview guide.
- When the discussion approached areas of significant interest to me, I paused the video-recording and explored the participant's views and experiences more deeply.
- In order to avoid the participant switching to 'audience mode' I kept the video clips to a maximum of three minutes (Haw and Hadfield 2011). After this point, I would pause the video recording explore the participant's thoughts on what they had just watched.
- The video was also paused if the participant expressed an interest in a particular moment of the recording, which was then explored further during the interview.
- At times the video-recording was fast forwarded to instances of the clinical session which I considered most significant to develop my theory.⁴⁵ I relied upon my theoretical sensitivity and my field notes taken during the observation to direct me to areas of interest on the recording.

At the end of the reflective interview, the participant was debriefed as described in previously in Section 6.4.1.1, with the addition that they were assured that the video-recording would be deleted immediately afterwards, and no copies would be made. As with individual interviews, a reflective summary was completed following each video-prompted reflective interview (Table 6.1).

Overall, even with the challenges of recruitment, the clinical observations and video prompted interviews proved very useful in facilitating my data analysis in two major ways. Firstly, during clinical observations I was able to make theoretical connections

⁴³ By this point in the study I had become so immersed in data and theoretically sensitive that I *knew* what I wanted to explore following the observation session, and as such the video-recording appeared to be a very useful reflective tool for the participant but less so for me.

⁴⁴ The video-recordings were viewed directly on the Apple iPad, which also acted as the video-recording device.

⁴⁵ All interviews occurred during participants' busy clinical schedule, I was aware of time constraints, and I did not want to extend beyond the agreed time.

between what previous participants had said during individual interviews with what I saw during the observation session, providing new perspectives and deeper analytical insights. For example, when previous participants talked of their different treatment approaches with patients, I could link aspects of these with what I was observing. Secondly, using the video-recording as a reflective tool during interviews not only reminded participants about the previous clinical session, but it also helped to ensure that their answers to questions were closely tied to their actions and clinical-decisions, which took place during the appointment. For example, participants could talk through their specific thinking and decision-making immediately after watching aspects of their clinical assessment and examination of the patient on the video-recording, and provided specific detail about why they performed a particular clinical procedure in a particular way.

Table 6.2 below presents the overall timetable of the interviews and video-recorded observation sessions conducted in this study.

Participant	1st Interview date (purposively sampled)	2nd Interview date (theoretically sampled)	Video-observation with reflective interview (theoretically sampled)
1	23 rd September 2010	10 th September 2012	
2	30 th September 2010		
3	7 th October 2010		
4	4 th November 2010		
5	15 th November 2010		
6	22 nd November 2010	28 th June 2011	
7	29 th November 2010	25 th August 2011	
8	4 th January 2011	11 th June 2011	
9	19 th January 2011		
10		17 th September 2012	7 th March 2012
1			15 th March 2012
12			20 th April 2012

Table 6.2 Overall timetable of interviews and video-recorded observation sessions

The data from all interviews were transcribed verbatim. The first five interviews were transcribed by the researcher as it had the benefit of facilitating full data immersion as highlighted by Charmaz (Charmaz 2006). It was felt that due to the number of interviews and my own limitations in typing proficiency; the help of a professional transcriber was sought for the remaining interviews. The transcriber was provided with written instructions to paraphrase the transcriptions and not to include hesitations, coughs or unintentional repetition of words. This served two purposes; it facilitated analysis by providing a clear and ‘cleaner’ statement; and secondly it saved the embarrassment of the participants when the transcript was returned for them for checking.

The turnaround time from interview to transcription was one week, at which point I read and re-read the transcripts whilst listening to the interview recording. As I did not transcribe the majority of the interview recordings, I felt this process was critical in becoming immersed in the data so that I could begin to ‘see’ patterns and processes early on. On a practical note, it allowed me to check the transcript and paraphrasing, and amend any errors or mis-transcribed sentences, prior to sending the transcript back to participants for checking. Participants were then sent the transcripts via email (Appendix 13) asking them to: 1) check the accuracy of the interview text; 2) add any additional comments they saw as appropriate and 3) check whether they wanted any of the text removed and 4) ensure that there was no information that might have threatened their anonymity. Importantly, this process also served to demarcate the point at which the interview transcript became ‘official’ research data which could then be analysed.

6.5 Researcher-participant relationship

By adopting a constructivist approach to grounded theory it was necessary to acknowledge and reflect upon my relationship with the research participants. My relationship with my participants during interviews was interactive, and it was during this interaction, that both members of the relationship ‘gave and took’ from each other, and knowledge (data) was constructed. Many of the research participants were senior, experienced osteopaths, with a great deal of clinical and on most occasions, extensive teaching experience. It was necessary for me to recognise and reflect on this potential power imbalance and proactively plan for how I might neutralise the relationship to

facilitate the mutual construction of data (Mills et al. 2006). These proactive strategies included: giving participants the choice of scheduling the interview at a time, date and location of their choice, taking a flexible, honest, and non-judgemental approach to interview questioning, sharing ideas and personal details so that there was an element of intimacy and reciprocity; and answering questions during and after the interview (Mills et al. 2006).

For participants which I had existing, previous and potentially future relationships with (such as work colleagues) it was important to clearly establish and develop a new and separate researcher-participant relationship. This relationship would sit within the context of the research study and was bounded by my ethical responsibilities to participants. It needed to facilitate my primary aim as a researcher, which was to generate ethical research data which could be analysed. For example, for participants that I had ongoing relationships with during the study (and also potential future relationships), it was important to ensure that discussions regarding the research, which occurred outside of the formal interviews sessions, were 'on their terms', and only took place if they chose to raise and discuss the study further.

Acknowledging my impact on the data collected, and that during interviews I and the research participants collaborated to construct reality and data, was important in contributing to the credibility of this research (Koro-Ljungberg 2008; Silverman 2010). By immersing myself in the data, constantly questioning and comparing ideas and concepts, I became further detached from my participants, and my relationship shifted from colleague-practitioner to researcher-participant. I noticed the subtle reactions of my participants when I asked a question which would have seemed obvious and trivial to me as an osteopath; questions such as '*What do you mean by observing the patient, during your clinical examination?*' Or, '*What would you do if you couldn't perform the postural examination?*' And, '*what does it mean when you say you're "trying to understand" the patient's body?*' Such questions momentarily 'threw' my participants, in a way that suggested that they hadn't given them much thought, due to the implicit meaning and tacit nature of the areas under discussion. When this reaction did occur, it appeared as a 'green light' to carefully follow up with further questions, to look beneath the surface and explore the meaning of what was being said. When I began to question the obvious, take nothing for granted, I shifted from practitioner to researcher. Early on

however, my inexperience in the research process became apparent. I found it hard to ask the ‘obvious’ questions in order to explore the meaning of what participants would say. It may be that colleagues at the OEI that I work at saw me as a fellow osteopath and teaching colleague, rather than a researcher, which is of no surprise as during the early stages of the research I *thought* and *felt* more like an osteopath than a researcher. This was evident during times when participants appeared flustered or perhaps embarrassed when they struggled to articulate ‘why and how they do what they do’ in practice. When occasions such as this occurred, I gave them time to reflect, and also reassured them that it can be a difficult process, and there are no right or wrong answers to the questions.

As I shifted from practitioner to researcher, I also perceived a shift in how participants’ related to me, during the periods of data collection. As the researcher-participant relationship developed, I sensed that they became more trusting of my role as a researcher and more assured in their role as a participant. This was especially evident during follow-up interviews, whereby it appeared that participants displayed a greater degree of openness and trust and they seemed more comfortable sharing personal and detailed information of their clinical decision-making and practice. I considered this shift in participants to be a positive one, and it contributed to the credibility of the research data generated.

Finally, during data collection, I was conscious of becoming over-involved in the interview, and the discussion became a two-way conversational ‘chat’, rather than an exploratory process aimed to generate research data. The three practice interviews with friends provided an opportunity to reflect on my interview style, and rein in my enthusiasm, so that it was more focused and directed towards specific related to clinical decision-making and practice.

6.6 Data management and storage

Each participant had a ‘case file’ containing the recorded interview, the raw interview data, biographical details (from the biographical form- Appendix 3), my analytical memos, interview notes and my own post-interview reflective notes. This case file was stored on the qualitative research software package NVivo version 8 (QSR 2008). NVivo assisted in organising the qualitative data text, so that they could be coded,

sorted, annotated and linked to memos and references. This was preferred to the manual ‘scissors and paper’ method (Bryman 2008a), as it offered me an efficient way to access the stored data, and provided visual illustrations of the theory as it was being constructed. There were limitations to using NVivo, in that it broke down the data into seemingly limited ‘bits’. I found it difficult to see relationships between categories, and found it hard to see the ‘bigger picture’. However, upon reflection this may have been due to my inexperience in qualitative research and the analytical processes of grounded theory rather than the NVivo software. Incorporating strategies such as diagramming and spreadsheets during the analysis were valuable in helping me to compare data with data and importantly for a constructivist approach to grounded theory, provided context, so that I could begin to ‘see’ the broader processes in the data. These analytical procedures are discussed later in Section 6.8. The next section discusses the ethical considerations of this research study and how these issues were managed.

6.7 Ethical considerations of this research

This section firstly describes the process of seeking and obtaining ethical approval. It then proceeds to discuss the major ethical considerations relevant to this research, and how they were managed. The major ethical considerations were; informed consent, avoidance of coercion during recruitment procedures, confidentiality and anonymity, and finally ensuring the psychological and emotional well-being of participants.

6.7.1 Ethical approval

For this research study, two separate ethical applications were made to two different ethics committees. Firstly, for the individual interviews, ethical approval was sought and granted by the Faculty of Health and Social Science Research Ethics and Governance Committee at the University of Brighton (Approval Number: 10-011.R2-Appendix 14), and the Ethics Committee of the British College of Osteopathic Medicine (BCOM) (Appendix 15). All participating OEIs, where participants were sampled from accepted this approval as being sufficient. Towards the latter half of the study, a second ethical application was submitted to both ethical committees at the University of Brighton and BCOM, in view of the additional data collection methods (video-recording and clinical observation), and new recruitment procedures necessary to develop the substantive theory. The combination of more sensitive methods of data collection and

the involvement of patients meant there were additional ethical issues to be taken into consideration, and are detailed in the following sections below. Both ethical committees approved this part of the study (Approval Number: FREGC-11-055.R1 Appendices 16 and 17).

6.7.2 Informed consent

Informed consent is defined as “a voluntary agreement made by participants after having been informed of the nature and aims of the study” (Holloway and Wheeler 2002b, p.286). In this research all participants, (whether practitioners or patients) gave written consent (Appendices 7, 11 and 18) having had the opportunity to read the participant information sheets (Appendices 6, 10 and 17).

The participant information sheets detailed the nature and purpose of the study and provided contact details of the lead researcher and the supervisory team. For practitioners, the participant information sheet explained that as a result of theoretical sampling they may be invited to participate in subsequent interviews, in which further written consent was obtained. These documents were sent to participants prior to meeting for the interview, so that they had time to carefully consider their involvement in the study. To supplement this, consent was sought verbally prior to the commencement of each interview, and all participants were reminded that all details of the discussion would remain confidential to the researcher and the supervisory team. All participants were reminded of their right to cease participation in the study at any time, and that if at any point during the interview they felt uncomfortable or upset they could stop the interview without giving a reason; however, none requested to do so.

In the case of the clinical observations, all patients received a verbal explanation and an information ‘pack’. The information pack, which contained the information sheet (Appendix 19), a consent form (Appendix 18) and a patient contact form (Appendix 20) was offered to patients by the initial contact person (for example, the clinic receptionist) when they contacted the clinic to book an osteopathic appointment. The information packs were posted, emailed, or given in person depending on the wishes of the patient and the nature of their initial contact. In order to allow time for patients to consider their involvement in the study, ‘walk in’ or ‘emergency’ patients (i.e. those without a booking in advance) were not offered an information pack, and only patients who had at

least three days before their appointment were offered an information pack. Patients were requested to contact the researcher should they wish to take part or if they had any questions or queries regarding the study. It was important to clearly explain to all patients considering participation that their treatment or care would not be compromised if they chose not to participate in the study. Those patients, who had agreed to participate, brought their signed consent form with them to their appointment. Patients were excluded if they were under sixteen years of age, declined or were unable to give consent; for example, if they were under the influence of strong medication or with inadequate grasp of the English language to fully understand the purpose and nature of the study.

6.7.3 Avoidance of coercion

An issue that needed to be considered and addressed was the potential for coercion during the recruitment process. Recruitment strategies needed to ensure that coercion was eliminated from the perspective of the researcher coercing potential participants to take part in the study, and from the perspective of the practitioners coercing their patients into taking part in clinical observations. These strategies are discussed below.

6.7.3.1 Individual interviews

For individual interviews, clinic managers were firstly approached and asked to inform the clinical tutors of the respective OEIs of the study, and place a poster with details of the study in the staffs' common room (Appendix 3). These methods addressed any issues of ethical misconduct, and promoted an 'opt in' recruitment strategy. Purposively sampling from this list of interested individuals eliminated any elements of coercion.

6.7.3.2 Clinical observations and video-prompted reflective interviews

For clinical observations and reflective interviews, the clinical tutors of the respective OEIs were again made aware of the study by way of the clinic managers informing staff and via a poster (Appendix 9). The additional recruitment processes for practitioners was passive by way of adverts run in the national osteopathic press (Appendix 9) and throughout the National Council for Osteopathic Research (NCOR) hubs nationally which advised participants to contact me should they be interested in taking part.

Once patients had been offered an information pack, all subsequent contact was between the researcher and patients interested in participating to help ensure confidentiality and avoid coercion from their practitioner. Patients were asked to contact me directly if they were interested in joining the study, or if they had any concerns or questions regarding the study and their participation. All participants were reminded that they could withdraw from the study at any time without giving a reason.

6.7.4 Anonymity and confidentiality

6.7.4.1 Individual interviews

To address any issues of confidentiality during the interview and transcription process, no names were used, instead transcriptions and participants were allocated a numerical code, to which only the researcher had access to the 'key'. When transcribing the interviews, all identifying personal details which may have compromised participants' anonymity were edited so as not to reveal the participant's identity. This was made clear to participants in the participant information sheet (Appendix 6), and they were further reminded of this prior to and after the interview process and their verbal consent was obtained at each point. One final additional strategy used to ensure participant confidentiality occurred during the member checking procedures. During this process, transcripts were sent back to participants prior to analysis, providing them with the opportunity to check for any details which they thought could compromise their anonymity.

6.7.4.2 Clinical observation and video-recording

It was important to ensure that practitioners involved in clinical observation respected the identities of their patients who were also being observed. As such it was made clear in the consent form (Appendix 11) of the need to respect the identities of patients who were participating in the study.⁴⁶

I was aware that during clinical observations, there was potential for an event or situation to occur which would require me to breach confidentiality. It was made clear in the participant information sheets (Appendix 10) and consent forms (Appendix 11)

⁴⁶ Whilst all registered osteopaths are required to respect patients' rights to privacy and confidentiality, as outlined in the Osteopathic Practice Standards (General Osteopathic Council 2012a), it was important to stress this requirement and make it explicit in the context of this study, in order to further ensure patients' anonymity and confidentiality.

that during observation sessions, should the researcher witness a situation which may have been deemed as malpractice, the researcher would have to have to disclose information to an appropriate authority which would be properly placed to address the issue (such as the GOsC). However, no such situation arose with either the patient or participant during clinical observations.

All the data collected remained the responsibility of the researcher, and only the researcher and supervisory team involved in the study had access to the interview transcriptions and audio-recordings. As the video-recording was used as a reflective tool rather than as 'raw data' to be analysed, it was destroyed immediately after the interview. The field notes taken during the observation contained no identifiable information. All audio-recorded data, field notes and interview transcriptions were kept in a locked drawer at the researcher's home, to be destroyed on the completion of the PhD. All electronic copies of the data were password protected.

6.7.5 Psychological and emotional well-being

Due to the depth of discussion, qualitative interviews can provoke distressing memories (Holloway and Wheeler 2002) and although I did not expect that participants would become upset or distressed during interview it remained a possibility. I was especially aware that the interview questions and viewing of the video-recording had the potential to cause some embarrassment and emotional distress, especially if participants perceived that their approaches to clinical decision-making and practice were being critically judged.⁴⁷ Before each interview, it was emphasised to all participants that they were the experts of their own reasoning and practice, and that my role as a researcher was to 'explore and capture' rather than 'criticise and evaluate' their clinical reasoning and practice (Unsworth 2008). Furthermore, all participants were informed that if for any reason they became upset, anxious or distressed during the interviews, that the interview would be paused, and they would be asked if they wanted to continue. In order to ensure that I placed the participants' welfare ahead of my aim of generating research data, I had to make appropriate preparations should such situations arose, and

⁴⁷ Throughout the interview and clinical observation/video-recording sessions, I was attentive to participants' body language and demeanour in order to pick up any signs that they felt uneasy or uncomfortable. At all times I was prepared to modify my interview approach and questioning style if I perceived a sense of unease in participants. However, whilst some participants found it challenging to reflect and articulate their views and experiences on certain interview topics, I did not pick up any signs of unease or anxiety in any way.

this included being prepared to follow-up interviews with a ‘well-being’ phone call to participants or directing them to counselling services via their general practitioner. However, none of the participants showed any signs of distress during the interview process or clinical observations and no follow-up phone calls were necessary.

Another issue which needed careful consideration was ensuring the emotional and psychological well-being of patients during clinical observation and video-recording sessions. A ‘typical’ osteopathic session often involves patients disclosing personal details to their osteopath and at times patients would be partially dressed (for example, during examination and treatment procedures), all of which occurs in the relatively confined space of a consultation room. The presence of an additional person in the form of a researcher with a video-camera had the potential to create a stressful and unpleasant environment for patients and practitioners. I informed patients and practitioners that I was also an osteopath, and this may have had a positive and negative impact on participants’ anxiety levels. In one respect it may have alleviated some potential anxiety on the part of the patient, by virtue of them knowing that I was also a healthcare professional and that I had ‘seen it all before’. However, practitioners may have perceived this as an additional stressor as they were being observed by a fellow osteopath, also with a background in osteopathic education and research. Although at times during the clinical observation participants’ behaviour appeared to suggest that my presence was felt, no participants or patients expressed that they felt any anxiety or emotional discomfort during the clinical observation, and none requested that the observation or video-recording be stopped.

6.8 Data analysis

6.8.1 Overview

An overview of the analytical steps taken in this study is explained below. Specific examples of these steps and processes are provided in Section 6.8.2. The major analytical processes used in this study were:

- Coding
 - Line-by-line coding, in-vivo codes, action codes, focused-coding
- The constant comparative method of analysis
- Memo-writing

6.8.1.1 Coding

The active construction of codes during the analysis formed a link between data collection and the development of theory and was used to help explain and understand conceptual reoccurrences and patterns in the data (Birks and Mills 2011). During the early stages of data analysis, coding took the form of *initial coding*, also termed ‘line-by-line’ coding (Charmaz 2006), which involved examining each line of data (in the form of a transcribed interview), which aimed to define actions or events of a given situation. I endeavoured to remain open and stay close to the data throughout all stages of coding. This was particularly important during the early stages of data analysis so I could look closely and see the nuances of what participants were saying in order to generate ‘analytical leads’ which could be pursued later on (Charmaz 2006). At this stage of analysis, ‘action codes’, employing gerunds⁴⁸ were also used to give an insight of what participants were discussing or what processes they were describing during the interview (Charmaz 2000). During this point in data analysis, an accessory coding strategy was employed by way of the use of *in vivo* codes (Charmaz 2006). In vivo codes use terms abstracted from the language of the study participants to label segments of data (Charmaz 2006). These codes referred directly to the words of participants, and aimed to serve as a symbolic indicator of participants’ perspectives, language and meanings (Charmaz 2006). During all coding procedures, data was compared with data looking for similarities and differences, and actively making analytical distinctions and connections.

The line-by-line codes developed from initial coding further directed and began to focus data analysis. Coding then moved to a form of intermediate coding, termed *focused coding*, which was used to assess which codes appeared to be the most significant (Charmaz 2006). Focused coding larger segments of data allowed me to begin to make ‘sense’ of coded data whilst elevating the level of conceptual analysis so that broader categories could be developed. As data analysis proceeded, I attempted to use different coding strategies to gain a different perspective on the developing theory. For example, I attempted to employ Strauss and Corbin’s *axial coding* in order to clarify relationships between categories and sub-categories (Corbin and Strauss 1990). Initially, this was a useful framework and it added some detail to my categories, but later on I found that it

⁴⁸ A *gerund* is a verb used as a noun ending in ‘-ing’. Using gerunds as codes helps to emphasise the actions and processes within the data (Birks and Mills 2011).

was rigid and limited my thinking. Examples of initial line-by-line coding and focused coding are provided later in Sections 6.8.2.2 and 6.8.2.4 respectively.

6.8.1.2 The constant comparative method of analysis

Section 5.5 in the previous chapter illustrated the different approaches of grounded theory that researchers can take. However, one characteristic of grounded theory which is common to all approaches is the ‘constant comparative method of analysis’. This method of analysis involves comparing data with data, data with category, category with category, which in practice is a non-linear iterative process (Charmaz 2006). Although I was new to qualitative research and grounded theory, I found the constant comparative method to be a ‘natural’ form of analysis, and it appeared that my personality and the ‘spirit of enquiry’ which motivated me to embark on this research facilitated me to compare data, to look for similarities and differences. The naturalness of the analytical process should not be confused with the post-positivist view of grounded theory in which codes, concepts and theory *emerge* from the data (Glaser and Strauss 1967). Rather, I compared and interpreted the data and constructed codes and categories, as a result of an active process. During the study, the constant comparative method was used throughout data analysis, from initial coding early on in the study, to the advanced level of analysis when writing up the substantive theory.

6.8.1.3 Memo-writing

Grounded theorists frequently make use of memos to obtain an ‘analytical grasp’ on their data (Charmaz 2006). Memo-writing throughout the data collection, coding and categorisation processes encouraged reflexivity, and help linked data-gathering with data analysis. Memo-writing throughout the coding process enabled me to identify and explicate patterns and relationships in the data so that codes could be defined and grouped to form categories with a greater level of conceptual abstraction. Identifying the characteristics and properties of categories helped give them shape and multidimensionality. Importantly, developing properties of categories through the writing of memos, facilitated the identification of gaps in the developing theory, which informed further data analysis and theoretical sampling (Charmaz 2006).

Memos were written from the very first interview to help me to begin to think analytically and theoretically. In practice memo writing involved coding data, forming

ideas (hypotheses) and then writing an analytical memo of my interpretations, thoughts and hunches. By collecting more data at subsequent interviews, I was able to explore these ideas and test these hypotheses,⁴⁹ thereby moving the theory forwards and upwards to a higher and more abstract level. This iterative process of memo-writing, data collection, data analysis and advanced memo-writing helped develop the theoretical linkages which formed the basis of the substantive theory. As the theory began to develop, I became more and more theoretically sensitive, enabling me to write more conceptually abstract memos, and then use theoretical sampling to further check out major categories and concepts.

6.8.2 Data collection and analysis

As grounded theory is iterative, the methods of data collection and data analysis occurred in unison. The next section details how the data collection and analysis processes ‘played out’ and how they led to the generation of the substantive theory. Figure 6.2, toward the end of this chapter, illustrates the processes of data collection and analysis used in the study.

6.8.2.1 Data collection interviews 1-7

The aim of the first seven interviews was to explore osteopathic clinical reasoning, by asking questions which would allow the participant to reflect on and describe how and why they made decisions regarding the diagnosis, treatment and management of their patients. Initially, the interview themes were quite broad, and the developing issues were pursued in more detail with probing follow-up questions. An interview guide that was used during interviews 1-7 is shown in Table 6.3 overleaf.

⁴⁹ During the constant comparative method of analysis, the recurrent interplay between inductive and deductive reasoning occurs when the researcher inductively builds a category from the data then looks to deductively test or verify the category during further data collection and analysis. This interplay of reasoning approaches is considered the key to a grounded theory being ‘grounded’ in the data (Strauss and Corbin 1998).

Interview guide

1. *Why did you choose to be interviewed for this research study?*
2. *When I say “clinical reasoning”, what comes to mind?*
3. *Imagine we are in your clinic, and you are about to see a new patient. Let’s say it’s a patient with back pain. Take me through your thinking process, as you work out what’s wrong with this patient.*
4. *Could you describe how you would structure an examination plan with a patient?*
5. *How do you structure a treatment plan for a new/returning patient?*
6. *Tell me how you go about deciding on what treatment approaches/techniques to use with your patients.*
7. *Are there any aspects of clinical reasoning do you feel are distinct or unique to osteopathy? Why?*
8. *Tell me what role (if at all) osteopathic philosophy/principles play in your decision making/clinical reasoning.*
9. *I’ve asked alot of questions, is there anything you’d like to ask me, or would like to add?*
10. *How did you find the interview?*

Table 6.3 Interview guide for interviews 1-7

6.8.2.2 Data analysis interviews 1-7

The transcriptions were read and re-read at least three times, before coding began. During this process, I listened to the recording of the interview in order to help become immersed in the data. Data analysis of the first seven interviews took the form of initial line-by-line coding (Charmaz 2006). Table 6.4 overleaf, provides an example of how line-by-line coding was used during interviews 1-7.

Quote	Line-by-line code
<i>I'm being told what to do by what the tissue tells me. So I'm not deciding what to do, I'm trying not to do that, I'm trying to assess and let the body tell me what it what it wants me to do to it, or what it will permit me to do.</i> (P2)	Trusting hands Body directing Working with the body
<i>It [providing choice] treats them as an adult and gives them the autonomy to say "look actually I don't agree with this and I don't want to do this; it doesn't fit in with my values, attitudes and beliefs and I want to change it" so they feel an equal partnership.</i> (P6, 1) ⁵⁰	Trusting patient Patient directing Equal control

Table 6.4 Examples of initial line-by-line coding employed during interviews 1-7

From the very commencement of the analysis memos were written, which helped link data-gathering with data analysis. At this stage memos were also written about each participant, acting as a form of an analytical ‘case study’. These memos analysed each participant’s approaches to different aspects of their practice (such as diagnosis, examination and treatment) so that similarities and differences in approaches to practice could be compared. For example, I noted how some participants emphasised the physical and biomechanical aspects of their examination and assessment of patients, compared to others that appeared to emphasise talking and listening to patients.

The amount of interview data and the number of initial codes generated,⁵¹ combined with my inexperience in grounded theory meant that it was difficult to ‘see’ differences or familiarities in the data, by using just the NVivo software. In order to facilitate the constant comparative method of analysis, participants were logged onto a spreadsheet,

⁵⁰ Throughout this chapter and the next chapter, quotations from participants are shown with either a ‘1’ or ‘2’ next to their allocated participant number. This refers to whether their quotation was said in either their first or second interview respectively. Quotations labelled with just the participants’ number, indicate they took part in one interview only.

⁵¹ At this point of data analysis 232 separate line-by-line codes had been generated.

which had their participant number running longitudinally down, and the characteristics of their practice (diagnostic, examination, and treatment approaches) plus any ‘key points’ which appeared to differentiate them from other participants. For example, the spreadsheet enabled me to compare the different ways in which participants gathered information from their patients (such as *listening*, *touching* and *looking*), and the consequences and conditions associated with these processes. This sizable table allowed me to stand back and ‘see’ what different participants were saying and provided an element of ‘distance’ from the data so that patterns could be identified. Table 6.5 shows the some of the line-by-line codes developed from the first seven interviews.

Codes	Quote
Determining cause of symptoms	<i>I'll also ask a patient to point to the area that hurts and if it's a problem I'll get them to reproduce the movement that causes the pain. (P5)</i>
Questioning old ideas	<i>The model of how treatments work, is what I challenge so, allot of it is just rubbish. (P6, 1)</i>
Monitoring actions	<i>I'm trying to be more in tune with 'how is the end feel of this joint?', 'how does this feel', 'would a different technique be better?' (P7, 1)</i>
Recognising common patterns	<i>Over the years I've developed little patterns of what are the likely causes of acute or chronic low back pain. (P2)</i>
Testing hypotheses	<i>And I'm also trying to rule problems out as well. (P1, 1)</i>
Adapting to patients	<i>And yes I adapt a lot to suit a wide range of people- because you have to. You don't know who is going to walk through. (P3)</i>
Learning from past mistakes	<i>Through experience I've found, sometimes by trying to help the patient, you become gung ho, and you just make things worse. (P2)</i>
Importance of looking at the body	<i>The postural observation, the active and the passive assessment are the constant cycle of things that I go through to try and get a better understating of the patient. (P1, 1)</i>

Table 6.5 Data collection and analysis interviews 1-7

From the first seven interviews, key concepts such as ‘the body’, ‘looking’ and ‘touching’ and ‘focusing on tissues’ were developed. It appeared that some participants were very focused on understanding their patients’ physical problem through touch and

movement, whereas other participants were not. However, the potential relationship between these processes and proceeding outcomes and actions (for example, examination or treatment procedures) needed further exploration. Nor was it understood why some participants found touching and looking at the body to be essential in their clinical decision-making and practice, while others perceived listening and talking to be the focus of their practice. Following the first seven interviews, it was felt that a substantial amount of data had been collected, and that a pause in data collection was necessary to get a handle on the analysis, so that differences and similarities between the data and participants could be deeply compared and explored. This reflexive pause proved to be very useful, and allowed the interview guide to be theoretically focused so that these major concepts and categories could be deepened through interviews 8 and 9 with two new participants, as discussed below.

6.8.2.3 Data collection interviews 8 and 9

Following the first seven interviews, data collection paused for five months to theoretically focus the interview guide for the next two interviews. Table 6.6 overleaf shows a revised interview schedule with examples of theoretically focused questions for interviews 8 and 9. Through focussing the interview guide, it was possible to get behind the meaning of the developing concepts in order to explain the similarities and differences between categories. As I continued to shift from practitioner to researcher, I became more analytical during these interviews, and not taking for granted participants' words, meanings and experiences became my 'default mode'.

Theory focused interview guide

1. Patient-practitioner relationship
 - a. *How do you see the patient's role in your relationship? Why? Are there any exceptions?*
 - b. *What does it mean to have a partnership?*

2. Professional identity
 - a. *How do you perceive your role with patients? Why? Exceptions?*
 - b. *What is the relationship to endeavour to form with your patients? Why, can you tell me more?*

3. Determining cause of symptoms
 - a. *When you say (e.g. "to find the source of the pain") what does that mean to you, can you explain a bit more?*
 - b. *Why is that the case?*
 - c. *How would you feel/what would happen if that wasn't the case/didn't happen?*

4. Examination
 - a. *What do you mean by (observe, palpate etc). Why is palpating important/how does that help you?*
 - b. *What does that involve?*
 - c. *Why do you do that?*
 - d. *How would you feel if you do if you couldn't do that?*

5. Body
 - a. *Some participants have talked of 'imagining' or 'visualising' the patient's body, when examining or treating, what are your own thoughts?*
 - b. *What do you mean by 'listening to the tissues'? Why is that important? Why is that the case?*

Table 6.6 Interview guide used during theoretical focusing of interviews 8 and 9

6.8.2.4 Data analysis interviews 8 and 9

Having employed line-by-line coding in the first seven interviews, the number of codes became cumbersome, and fracturing the data into such small and numerous pieces became challenging to constantly compare. For interviews 8 and 9, coding took the form of 'focused coding' (Charmaz 2006), which allowed larger segments of data to be coded according to the significance perceived by earlier codes developed line-by-line. This facilitated a more conceptual approach to coding, through which I was able to

develop categories and sub-categories, to help make sense of the data. I also returned to the data generated from earlier interviews (interviews 1-7) and analysed and re-coded based on the focused codes. Table 6.7 below shows an example of focused coding used for the analysis of data from interviews 3, 8 and 9.

Quote	Focused code
<i>...there is a lot of talk between you and the person and a lot of communication. You are talking to them the whole time, 'how does the treatment feel'?...[and] you are trying to get a gauge on how it really feels to them. (P3)</i>	Interacting with the person
<i>...there are times when I think I am being intuitive about what the tissues feel like and I'm not actually thinking about what's under my fingers. It's almost like they're going by themselves. (P8, 1)</i>	Interacting with the body
<i>I go quite heavily into the history of their complaint, their occupation and what they do on a day-to-day basis and then how that feeds into their aggravating and relieving factors. So try to get quite a clear picture of all the things that bothers them. (P9)</i>	Interacting with the patient

Table 6.7 Examples of focused coding

Categories were made conceptually denser by constantly asking questions of the coded data such as 'when, where, why, who, how and with what consequences' (Corbin and Strauss 1990). While I didn't strictly follow the coding paradigm⁵² of Corbin and Strauss (Corbin and Strauss 1990), it was a useful analytical tool to begin to sort, order and link categories and subcategories so that coherence was given to the theoretical processes developing from the data analysis. By thinking about my data in terms of

⁵² The 'coding paradigm' offered by Strauss and Corbin (1990) provides a method to interrogate the data. Whilst it was a reasonably useful tool to push me analytically during this period, I found it somewhat prescriptive and rigid and discontinued soon after interview 10.

conditions, context, action/interaction, and consequences, I could begin to relate subcategories to categories (Corbin and Strauss 1990). For example, a subcategory of the category ‘generating cues’ was ‘interacting with the body’. ‘Interacting with the body’ was also an *action* used during *conditions* of ‘practitioner-patient relationship’. A *consequence* of ‘interacting with the body’ was ‘to understand the body’.

During the analysis of data from interviews 8 and 9, diagramming was employed to overcome the issues I was having with NVivo and focus my analysis on the substantive area of enquiry, and not to lose sight of the research questions. Diagramming helped force me to organise my analysis and begin to construct theoretical links between categories, and facilitated the process of constant comparison by ‘actually seeing’ a visual image of the categories and the developing theory (Charmaz 2006). The construction of the diagrams proved to be very helpful in providing a visual representation of categories, and how they potentially fitted together. Constructing and re-constructing different versions of the diagrammatic model pushed me to look further for connections in the data,⁵³ The process of diagramming helped to move the analysis on by exploring the concepts of ‘touching’, ‘seeing’ and ‘listening’, and the relationships between these and other concepts such as the ‘role of the practitioner’. An early diagrammatic model is included in Appendix 21 and contributes to the audit trail for this research. The major categories and subcategories which were constructed following the analysis of interviews 8 and 9 are shown in Table 6.8.

Category	Subcategory
Diagnostic approach	Step-by-step
	Automatic
Generating cues	Determine the problem
	Body focused
	Tissue focused
	Understand the person

Table 6.8 Data collection and analysis interviews 8-9 (continued overleaf)

⁵³ At this point I was beginning to feel overwhelmed with the large amount of data and felt I began to suffer from what Clarke (2005) describes as ‘analytical paralysis’. Diagramming helped me to organise categories and their relationships into a process-based model which was focused on the substantive area of clinical practice and decision-making.

Category	Property
Communication	Non-verbal (touching, looking, moving)
	Verbal (talking and listening)
Treatment focus	Body and tissues
	Education
	To reassure and support
Interacting with the patient	Talking
	Listening
	Teaching
Interacting with the body	Touching
	Movement
Role of the patient	Active partner
	Passive recipient
Situation	Familiar
	Unfamiliar

Table 6.8 (continued) Data collection and analysis interviews 8-9

At this stage of data analysis, it appeared there were distinct variations to how participants generated cues when interacting with patients and also their intended goals during treatment and management. The constant comparative method of data analysis had forced me to ask questions such as ‘what are the factors behind the different ways in which participants interact with patients and generate cues?’ ‘What is the relationship between the participants’ therapeutic approaches and their clinical reasoning?’ ‘What are the different roles that practitioners adopt with their patients?’ ‘How might these different roles influence participants’ clinical reasoning?’ It was at this point during the study that my thinking began to shift from ‘just’ exploring the nature of osteopathic clinical reasoning, to also investigate the different therapeutic approaches that practitioners took in practice. I also needed to explore the relationship between participants’ therapeutic approaches and their clinical reasoning, as I hypothesised that this relationship may ultimately influence the clinical decisions they made in practice. By staying close to the data during the early periods of analysis, I was compelled to follow-up and explore the differences in styles of practitioner-patient interaction, clinical decision-making and variations in the approaches to practice, which I termed ‘therapeutic approaches’. By evaluating the fit between my original research interest

and the data and developing theory the original research questions had to be adapted to represent this shift in focus.⁵⁴

At this point I consulted the existing literature on professional socialisation and identities in education (Beijaard et al. 2004) and physical therapy (Öhman and Hägg 1998; Richardson et al. 2002; Lindquist et al. 2006; Bartlett et al. 2009). This enhanced my theoretical sensitivity and led to the development of three different therapeutic approaches that participants took with their patients, these were provisionally named ‘Treater’, ‘Communicator’ and ‘Empowerer’ respectively.

6.8.2.5 Data collection interviews 10-12

From the analysis of data obtained from interviews 1-9, it appeared that the different therapeutic approaches that participants took influenced the nature of their clinical decision-making, and specifically the level of patient involvement in the clinical decision-making process. Also, participants appeared to interact with patients in different ways, and used different attributes of the self to generate cues. The decision was made to theoretically re-sample three participants who represented each of the three therapeutic approaches to further explore these potential relationships. Participants 6, 7, and 8 exhibited strong characteristics of the three therapeutic approaches. An analytical memo is provided in Table 6.9 overleaf, which summarises the major ideas to be followed up during the interviews from the theoretically sampled participants 6, 7 and 8.

⁵⁴ See Section 4.7 for the research questions and aims.

Analytical memo

What are the differences (for example, examination and treatment processes) and similarities between the different therapeutic approaches identified. Are they really that distinct, and if so how and why?

Are these 'preferred' therapeutic approaches which characterise different participants practice? If so, how does this preference develop?

Or are they a number of therapeutic approaches which experienced practitioners can 'deploy' depending on the situation? If so, what are the different situations? How do participants move between these different approaches, and what are the 'triggering factors'?

Participants appear to play different roles in their relationships with patients. Some participants lead, some guide and some help the patient to lead. What are factors behind this variation?

Table 6.9 Analytical memo written for interviews 10-12

6.8.2.6 Data analysis interviews 10-12

The data analysis from these interviews followed a similar method to the previous two interviews. However, as these participants were theoretically sampled, I had a good idea of which aspects of data were required to fill gaps in categories for further theory development. My increasing theoretical sensitivity helped make the constant comparative method of analysis an easier and more fluent process, and by this point I had become so immersed in the data that I could begin to hear the voices of previous participants in my head.⁵⁵

As with previous interviews, after each interview I made lengthy reflective notes, and recorded my initial thoughts, feelings and hunches about the interview. The data analysis from these interviews further developed the three different therapeutic approaches, and the variations in how participants interacted with their patients in order

⁵⁵ By 'hearing voices', I meant that that by this stage of the study I'd become so familiar with participants and their worlds that I was becoming immersed in the data (Holloway and Wheeler 2010). In such a state of data immersion, I found myself constantly comparing data in my head, even when I was 'away' from the study.

to generate cues and knowledge, which I termed '*focus of interaction*'. At this point I used the extant literature on the 'therapeutic use of self' (Rowan and Jacobs 2002) and 'embodied relational understanding' (Todres 2008, 2011) to help make sense of how participants would employ aspects of the self to engage with the patient and influence the nature of their interaction. I used the language and abstracted from these extant theories to help push me to be more creative and imaginative in my labelling of the data. The theoretical connections, established at this point, between therapeutic approach, focus of interaction and therapeutic use of self are illustrated in Table 6.10 below.

<i>Therapeutic approach</i>	<i>Focus of interaction</i>	<i>Therapeutic use of self</i>	<i>Example</i>
Treater	Body-focused interaction	Physical self	Movement and touch of the patients' body and tissues
Communicator	Person-focused interaction	Personal self	Personal attributes, self disclosure
Empowerer	Patient-focused interaction	Educational self	Teaching and constructing knowledge and information

Table 6.10 Relationship between the categories therapeutic approach, focus of interaction and therapeutic use of self, developed after interviews 10-12

There was a four month pause before I collected any further data, which was mostly deliberate,⁵⁶ as I intended to develop the theory through a cycle of data immersion, constant comparative analysis and engaging with the extant literature. My research 'hat' was firmly fixed to my head, and during this pause I regularly tested my ideas and hypotheses informally talking to osteopathic colleagues and observing final year clinical students, and with my own patients whilst at work. By diagramming and re-diagramming I was able to view the data in different ways, trialling different orders, and trying different concepts as core categories.

⁵⁶ This was also the time it took to obtain ethical approval for using observation and video-recording methods and recruit participants so that the developing theory could be tested and refined. With no 'new' data I was forced to continue to immerse myself in the data and became very familiar with individual participants' words, approaches and stories.

Using individual interviews to collect data had helped develop some major theoretical insights of participants' clinical reasoning and practice; however, this method of data collection failed to provide sufficient data to explain the factors behind the different therapeutic approaches and what drove participants to develop a particular approach to practice and clinical decision-making. At times during individual interviews, it was apparent that participants struggled to articulate these aspects of their practice, and it was decided that observing clinical appointments with 'real life' patients would enable me to 'see' these aspects of my theory in action, and also help fill the gaps which remained elusive during interviews, such as the reasons behind the variation in participants approaches to examination and treatment. In this respect, the decision to employ non-participant observation, video-recording and video prompted reflective interviews was theory-led, and constituted part of the theoretical sampling process of grounded theory (Birks and Mills 2011). Furthermore, by video-recording the clinical appointment, to act as a prompt for the interview immediately afterwards, it was felt that this would assist participants to reflect closely and more deeply on their clinical decision-making and actions during the previous appointment (Haw and Hadfield 2011).

6.8.2.7 Data collection- Non-participant observations and video-prompted reflective interviews 13-15

The aims of this period of data collection were to further test and clarify the developing theory by employing the additional data collection methods of observation and video-recording. Data analysis and diagramming had resulted in an advanced diagrammatic model which began to identify the major categories and relationships between them, but required further development. This advanced diagrammatic model is illustrated in Figure 6.1 overleaf.

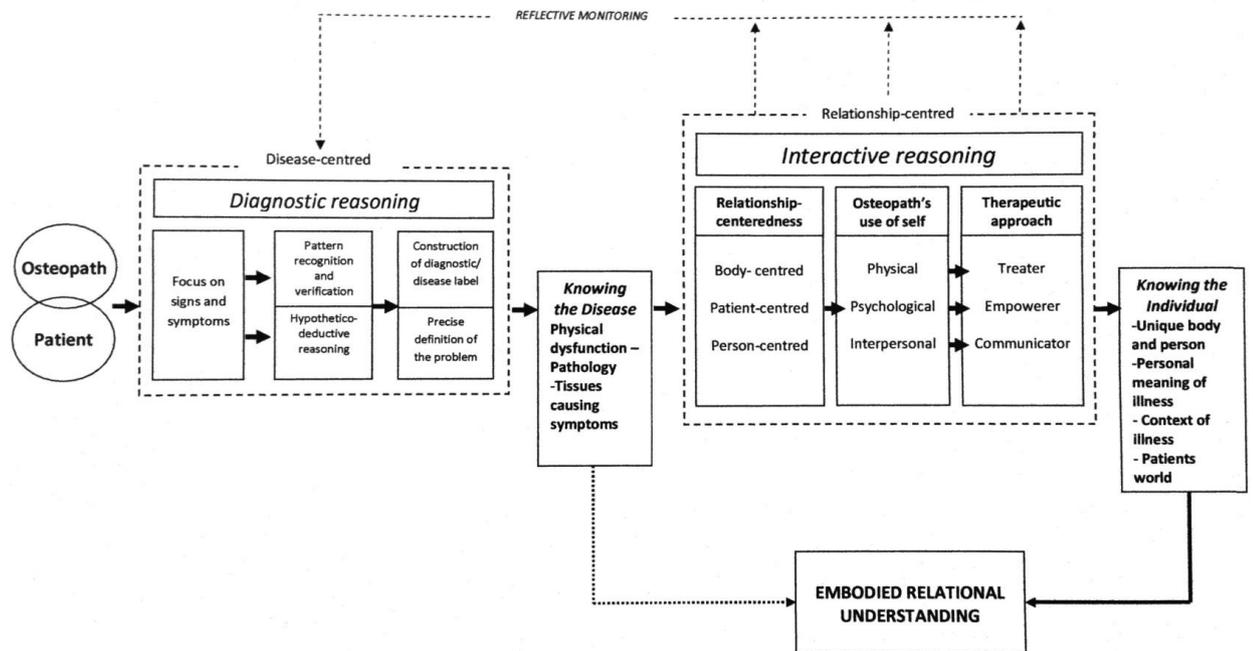


Figure 6.1 Advanced diagrammatic model

The advanced diagrammatic model (Figure 6.1) was tested in two ways. Firstly, data analysis and engaging with the literature had further enhanced my theoretical sensitivity and during the clinical observation sessions the model was at the forefront of my mind, enabling me to see how (or how not) aspects of the theory ‘played out’ in a real-world osteopathic clinical appointment. In addition, an observation guide helped focus my observation on the most theoretically significant aspects. An example of one of the observation guides is illustrated in Table 6.11 overleaf.

Observation guide

- How did the interaction of patient and osteopath begin?
- The approach that the particular osteopath takes to examination and treatment, with the three types of practice approaches in mind. How do they personalise these?
- The role that the patient takes in the encounter, for example, is the patients actively engaging or taking a more passive approach?
- Has the osteopath come across something new or unfamiliar/unexpected, how does he react?
- During the 'hands on' osteopathic treatment what is the verbal and non-verbal interaction like?
- Are there any tonal changes of voice?
- What is the body language, body reactions and responses of participants?
- Types of questions asked (open questions or closed questions?), and the response of the patient.
- During the follow-up session, how has the above changed (if at all)?
- How does the relationship change during the session and between sessions?
- Therapeutic use of self? When, how and with what consequence?

Table 6.11 Observation guide used during the clinical observation sessions

Secondly, the developing theory was tested explicitly during the video-prompted reflective interviews. At the end of the reflective interviews, the advanced diagrammatic model (Figure 6.1) was presented to participants with a brief explanation, and they were invited to comment on how they felt about the model, and how it related and resonated with them and their practice. This form of 'member checking' (Bryman 2008b), was useful as all participants appeared to engage with the conceptual model to an extent, and it generated a deeply reflective discussion about some of the major theoretical concepts of the developing theory.

The video-prompted reflective interviews were assisted by the development of a revised interview guide. This guide helped to relate what was seen during the clinical observation session to specific areas of the conceptual model which needed exploring and clarifying. An example of one of the interview guides used during the video-prompted reflective interviews is illustrated in Table 6.12 overleaf.

Guide- video-prompted reflective interview

Opening questions- *'can you share your thoughts on that clinical experience'?*

1. Participants relationships with their patients

- a. *What were your initial aims with your patient? Why? How did you intend to meet those aims?*
- b. *Could you comment on the information gathered from that action (patient discussion or treatment, examination procedure)*
- c. *What are your feelings and thoughts about the patient at this time?*
- d. *What sort of relationship do you want to build with this patient? How are you relating to the patient and with what aim?*
- e. *Through the course of treating this patient, did you come to see their situation in a different way? Can you tell me some more?*

2. Performance of examination and treatment procedures

- a. *How did you decide to examine the patient in that way?*
- b. *What were you thinking when you were carrying out that action (examination or treatment procedure)?*

3. *What are your overall thoughts about the information you have obtained from this part of the examination? What else (if anything) would you like to find out about this patient? Why?*

4. Constructing a diagnosis

- a. *As you do this clinical test/examination etc. what are you focusing on? What are you thinking about? How does this help you? Why did you perform it in that way? Could you have done it differently?*
- b. *Has the patient condition met with your expectations? How does this make you feel/think?*
- c. *What were your main concerns about this patient? How did you manage those concerns?*
- d. *Did anything take you by surprise while caring for the patient? How do you feel in that situation?*
- e. *How did you know it was safe to proceed with this patient?*

Table 6.12 Video-prompted reflective interview guide (continued overleaf)

Guide- video-prompted reflective interview

5. Therapeutic approach

- a. *How do you think you can help this patient?*
- b. *Where did you focus your treatment approach? Why, can you tell me a little bit more?*
- c. *How does touching/talking/moving the patient influence your knowledge and understanding of the patient?*
- d. *As you examine (observation or touching) the patient, what are you thinking?*
- e. *How do you see future sessions with this patient? Can you tell me a bit more about that?*

6. Closing questions

- a. *I've asked a lot of questions, are there any questions you'd like to ask me?*
- b. *How did you find the interview/observation?*

Table 6.12 (continued) Video-prompted reflective interview guide

6.8.2.8 Data analysis interviews 13-15

As on previous occasions, the video-prompted reflective interviews were transcribed verbatim. By this time data analysis was more rapid and enabled some key aspects of the theory to be tested and developed. For example, the different approaches (such as 'step-by-step' and 'automatic') involved with 'diagnostic reasoning' became further established. Also, by comparing the data from participants in this round of data collection with the previous enabled the major properties of the different therapeutic approaches to be developed and refined. This resulted in the development of three additional categories; 'approaches to clinical decision-making, 'level of patient involvement' and 'therapeutic goal'. These new categories were then integrated into the advanced diagrammatic model. I then revisited the data collected from interviews with previous participants, and with these three categories in mind, and further developed the relationships between them. This resulted in the differences between the therapeutic approaches becoming clearer. It became apparent that the particular therapeutic approach of participants influenced how they interacted with the patient, the level of patient involvement and their intended therapeutic goal.

Whilst the theory was becoming more process based, with the relationships and linkages between categories developing, the factors behind participants' therapeutic approaches and factors which would help clarify the variation in approaches needed to be identified in order for the theory to have real explanatory power. Through writing advanced analytical memos I 'interrogated' the key categories whilst scrutinising the relationships between them, and by constantly going back to my data, I ensured that my findings were truly *grounded* in the data (Charmaz 2006).

An example of an analytical memo used to interrogate the data at this stage is illustrated in Table 6.13.

Analytical memo
<ul style="list-style-type: none"> • <i>Are the therapeutic approaches favoured and preferred by participants, or are they a range of therapeutic 'options' which all participants can take, depending on the individual patient and their situation?</i> • <i>What are the influencing factors which might result in a participant favouring a particular therapeutic approach? How has this developed and what are the conditions?</i> • <i>Can participants change their approach? If so what are the triggers and what are the consequences? Can others <u>not</u> change their approach? Why?</i> • <i>What are participants 'doing' and what is 'going on' when participants adopt a particular approach? What are the consequences of this process?</i> • <i>Some participants appear to be more rigid in their practice, whilst others appear more adaptable. Why is this the case?</i>

Table 6.13 Examples of an analytical memo written during the observations and video-recording of clinical appointments

Writing analytical memos further developed the theory so that categories, sub-categories and their relationships were defined and refined. New categories which were

formed at this point included participants' *view of osteopathy*, which was strongly related to their *therapeutic approach*. How participants viewed osteopathy was based on a number of factors which were hypothesised and checked out by going back to the data. For example, from my own experience as an osteopath I hypothesised that one factor which could be related to how participants viewed osteopathy, was their *professional identity*, and this was deductively 'tested' out by returning to the data to look for evidence to accept or refute it. Charmaz considers that using one's own experiences to generate ideas and hypotheses which are then examined in the data enable the researcher to make "logical inferences" of the theoretical relationships between categories and cases (Charmaz 2006, p.104). By forming hypotheses which could explain the different views of osteopathy which participants held, and moving back into the data to check them empirically, I was inadvertently taking an 'abductive'⁵⁷ approach to reasoning which is thought to be one of the major characteristics of grounded theory analysis (Charmaz 2006).

6.8.3 Theoretical sorting and integration

At this stage I was still to select a core category, or develop a new one to help explain the variations in the data, in particular the variation in participants' therapeutic approaches and how these developed. My hunch was that getting behind these variations was central to developing a theory with real explanatory power. Whilst I had an idea about what my theory was 'all about' it was difficult to clearly articulate precisely what it was trying to explain, which caused a significant period of frustration. I repeatedly asked myself 'what are participants doing, and to what end'? When asking this question I was conscious of the criticism frequently levelled at grounded theory studies,⁵⁸ and especially at those researchers who do not follow a 'Classic' or 'Glaserian' approach to grounded theory, that they risk developing a *descriptive account* rather than a *conceptual theory* (Cutcliffe 2005). I considered that arriving at a core

⁵⁷ *Abduction* or *abductive reasoning* involves examining the data and then forming multiple hypotheses which might explain what is 'observed' in the data. These hypotheses are then proved or disproved by re-examining the data and arriving at the most credible interpretation (Birks and Mills 2011).

⁵⁸ During this period I was fortunate to be involved in a question and answer session with Dr Barney Glaser. Whilst this was a real privilege, it made clear to me his distinction between full conceptual description and a conceptual theory, especially with respect to constructivist approaches to grounded theory (Glaser 2002). This seminar also re-iterated to me the positivist foundations and assumptions of his 'Classic' approach to grounded theory, especially in respect of *theory* emerging 'naturally' from analysis, and emphasised to me the differences with my constructivist approach.

category, which would help organise my data to form a conceptual theory, was vital to ensuring it had explanatory power and avoid pure description.

To facilitate this the explication of a core category, I employed a process described in the Dimensional Analysis (DA) approach to grounded theory (Schatzman and Strauss 1973) in which the researcher ‘auditions’ different categories to act as a central category (termed ‘perspective’ in DA). Each time a category is auditioned as a potential core it ‘choreographed’ the data to re-configure the theoretical model (Kools et al. 1996). For example, a perspective which was auditioned was *Embodied Relational Interaction* which I considered as the interaction and understanding developed through lived situations and encounters with patients. Whilst this organised some facets of the theory, in particular the flexibility of some participants’ practice approach, it was unable to explain the variations in therapeutic approaches, and therefore it failed as core category. I found the auditioning process of DA a useful analytical strategy to help be creative and continue to abstract and conceptualise my developing theory rather than pure description. However, none of the categories which I had developed to that point appeared to succeed as the core organising concept, as they didn’t enable all the other categories to fit together.

I continued to use the diagramming technique offered by Charmaz (2006), to provide a visual ‘flow-chart-like’ image to illustrate the relationship between developing categories. Using the diagrams as visual aids, I could write out the theory through the use of a ‘storyline’ (Birks and Mills 2011), and through this process I began to further *explain* the theory and explicate relationships between the major categories and integrate them into a seemingly more coherent theory. For example, by writing a storyline I was able to ‘talk through’ the variations in different therapeutic approaches and pin down how they influenced the way in which participants interacted with patients and their approach to clinical decision-making. This process also served to highlight gaps and poorly fitting categories within the theory and which need re-ordering, re-naming or further development. This process led to refining categories and in some cases incorporating categories into more abstract categories. For example, *therapeutic use of self* was subsumed into *focus of Interaction*, and together these formed the category labelled *interacting with patients and interpreting cues*.

The storyline (and accompanying conceptual diagram) was written and re-written several times and involved grouping major categories with their representative memos and providing interview data from participants to ground my theoretical claims. This period spanned more than five months, and it was during this process of moving back and forth between writing the storyline and engaging with the data (and literature) that I developed the category of ‘conception of practice’ which was ultimately selected as the core category.⁵⁹ By engaging with the literature around epistemology of practice, technical rationality and professional artistry (Schön 1983; Fish and Coles 1998), I began to view the data and theory through this conceptual lens. This lens began to pull the theory together, and provided order to all categories thereby helping to get behind and explain the differences between the variations in therapeutic and clinical decision-making approaches.

To check out the core category and to facilitate its theoretical sufficiency, two participants (participants 1 and 10) were theoretically sampled and re-interviewed based on how I interpreted them to conceive their practice based on their previous interview data and the extant literature. Participant 1 appeared to strongly value hands-on skills and technical knowledge in practice. During the second interview he talked about simply applying osteopathic theories and propositional knowledge to clinical situations, which then guided his hands-on skills, suggesting a technical-rational conception of practice. Whereas participant 10 appeared to appreciate the uncertainty of practice, and treated practice as problematic and changing, suggesting a conception of practice which leaned towards professional artistry. During both these interviews, I explored the reasons behind why they conceived practice and how it related to their therapeutic approach. These interviews generated new codes related to the factors which influenced participants’ conception of practice, such as their *educational experiences* and *views of health and disease*. This process helped move the core category towards theoretical sufficiency, meaning I could effectively explain all aspects of the theory and account for variations in the data.

⁵⁹ This process of writing and re-writing the storyline enabled me to apply my theoretical sensitivity so that the extant literature which I had engaged with during data analysis helped to reinforce and increase the explanatory power of the developing theory (Birks and Mills 2011).

At this stage I had the opportunity to formally present my developing theory at two international conferences. One was a research conference in the UK, with an audience of around 150 delegates of researchers and practitioners.⁶⁰ The second was a CPD conference at an Australian university, with an audience of about fifty osteopathic and healthcare faculty members.⁶¹ On both occasions, the audiences seemed to engage with the presentations and the discussions with individual audience members following the presentations illuminated some ambiguity between terms and relationships. For example, there was some confusion around the naming of the different therapeutic approaches and resulted in my returning to the data and deciding to re-name the therapeutic approach of ‘Empowerer’ to ‘Educator’. Overall, these were encouraging experiences and appeared to suggest that there was some credibility, confirmability and transferability of the theory (Lincoln and Guba 1985).

Further engaging with the literature, writing a theoretical article for publication,⁶² discussions with supervisors, peers and colleagues who provided critical feedback, resulted in further re-organising of the theory so that, in the words of Glaser (1978), it had ‘fit and workability’ meaning that the substantive theory fitted the data and had explanatory power, and therefore relevance, and is presented fully in the next chapter.

Due to the iterative and non-linear nature of grounded theory, the processes and procedures of grounded theory can be difficult to illustrate. Figure 6.2 overleaf, attempts to capture the iterative analytical processes used in this study, and provides a timeline and summary of how data collection, analysis and engaging in the literature, were tied together in this research study.

⁶⁰ Thomson O.P, Petty N.J and Moore A.P. *Approaches to clinical reasoning in osteopathy*. The 9th International Conference of Advances in Osteopathic Research, London, UK, 15th September 2012.

⁶¹ Thomson O.P. *Clinical reasoning and therapeutic approaches in osteopathy*. Faculty CPD Conference, Victoria University, Melbourne, Australia, 30th January 2013.

⁶² Thomson, O.P., Petty, N.J. and Moore, A.P. 2012. Reconsidering the patient-centeredness of osteopathy. *International Journal of Osteopathic Medicine* 16(1): 25-32

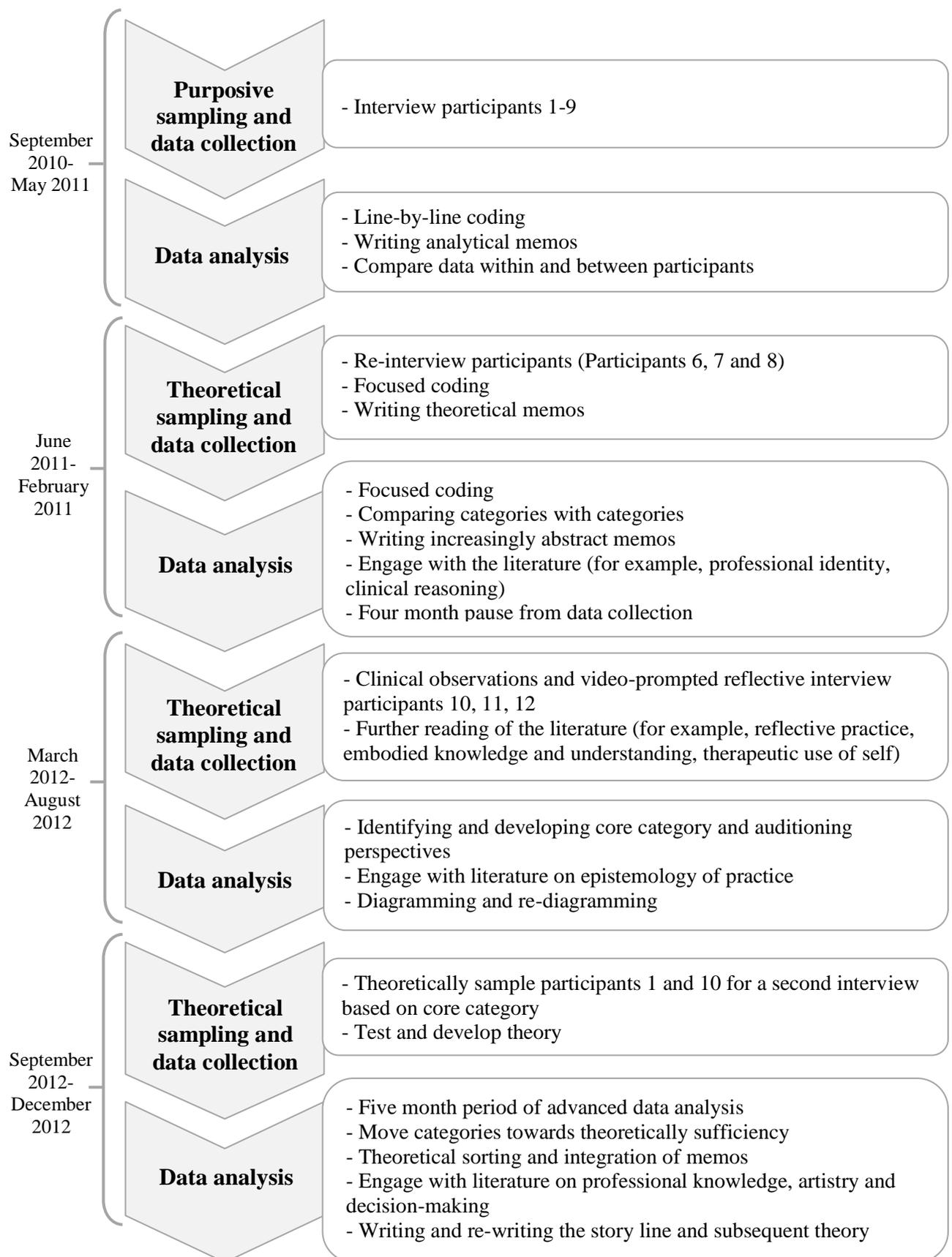


Figure 6.2 Summary and timeline of the data collection and analytical processes

6.9 Chapter conclusion

This chapter has justified and documented the rationale behind the methods used in the data collection and analysis procedures used in this study, and how the ethical considerations relevant to this research were managed. The data was collected via semi-structured interviews, non-participant observation followed by a video-prompted reflective interview. The data was analysed using grounded theory coding, the constant comparative method of analysis and memo-writing throughout the process of analysis. Initial purposive sampling of practicing osteopaths who were also clinic tutors in OEIs throughout the UK ensured that good informants were invited to participate in the research. In accordance with grounded theory, the process of theoretical sampling was used by returning to specific participants and utilising non-participant observation and video-recording of practicing osteopaths, the decision of which was informed by data analysis and the developing theory. This facilitated categories to be theoretically sufficient, so that the substantive theory could account for all variations in the data. Due to the exploratory nature of grounded theory, the research questions and aims were redefined, following initial data collection and analysis (discussed previously in Section 4.7).

This chapter and the previous chapter provide the reader with an audit trail, demonstrating how a theoretical model of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study has been constructed. The next chapter presents the substantive theory generated from these methods with supporting evidence provided by way of interview data.

Chapter 7: Findings

7.1 Introduction

In this chapter the main findings of the study are presented. The constructed theory is process-based, and each aspect is supported by quotations from participants' interview data and serves as supportive evidence for the theoretical claims made in this chapter. Quotations were selected to ensure there was variation across study participants. At times, quotations were selected to offer an extreme or contrasting view, in order to provide breadth to the findings. When extreme or less typical quotations are used, this is made clear. This chapter begins by introducing the background of the study participants to provide context to the findings of this research. Then the substantive theory of osteopathic clinical decision-making and therapeutic approaches will be presented in the following way: participants' professional views and their general clinical practices and procedures. It goes on to present three distinct models of therapeutic approaches which characterised the study participants' clinical decision-making and practice. This chapter presents the core category of participants' 'conception of practice' followed by the individual influencing factors. The full theory of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study is then presented, and concludes this chapter.

7.2 Participants' background

Participants lived and worked in different regions of England; six were based in London, one in the West Midlands, four in the South East, one in the East of England. Table 7.1 overleaf, summarises participants' educational and in some cases, their teaching background.

Participant	Gender	Years since graduating	Qualifications	Teaching position held
1	M	13	BSc (Hons) Ost	Clinic tutor and lecturer
2	M	14	BSc (Hons) Ost Med, Dip.Ost	Clinic tutor and lecturer
3	M	6	BSc (Hons) Ost Med, Dip Ost, MSc	Clinic tutor and lecturer
4	M	16	Dip Ost	Clinic tutor and lecturer
5	F	13	BSc (Hons) Ost Med, Dip Ost	Clinic tutor
6	M	25	BSc (Hons) Ost Med, Dip Ost, MSc	Clinic tutor and lecturer
7	M	9	BSc (Hons) Ost, Med, Dip Ost, Dip Naturopathy, MSc	Lecturer
8	M	22	BSc (Biochem) Dip Ost	Clinic tutor
9	F	22	BSc (Hons) Ost Med, Dip Ost, Dip Naturopathy	Clinic tutor and lecturer
10	M	6	BSc (Hons) Psych, BSc (Hons) Ost Med, Dip Ost, MSc	N/A
11	M	14	BA, BSc (Hons) Ost, Dip Ost,	Clinic tutor and lecturer
12	M	19	BSc Ost	N/A

Table 7.1 Summary of participants

7.2.1 Educational background

All participants had undergraduate qualifications in osteopathy from a recognised osteopathic education institution (OEI), enabling registration with the GOsC. Eleven of these participants graduated with a BSc degree in osteopathy and one graduated with a Diploma in Osteopathy (participant 4). Of the twelve participants, four had completed postgraduate MSc degrees; participant 3 in Pain Management, participant 6 in Osteopathy, participant 7 in Musculoskeletal Medicine, and participant 10 in Sport Injury Rehabilitation. Five participants had prior undergraduate degrees, four were in

the human and natural sciences (participants 4, 5, 7 and 8), and one was in a foreign language (participant 11). Participants graduated from three different OEIs and these are summarised in Table 7.2 below.

Number of participants	OEI
7	1
4	2
1	3

Table 7.2 Summary of participants' educational background⁶³

7.2.2 Age and gender

Of the twelve participants two were female, ten were males. The age profile of participants is illustrated in Table 7.3 below.

Number of participants	Age (years)
3	31-40
6	41-50
3	50+

Table 7.3 Age of participants

7.2.3 Years of clinical experience

Participants had between six and twenty-six years of post-qualification clinical experience. The break down is illustrated in Table 7.4 below.

Number of participants	Years in practice
2	6-9
7	10-20
3	20+

Table 7.4 Clinical experience of participants

⁶³ The recruitment strategies (Section 6.3) aimed to provide an opportunity for clinical tutors from all nine osteopathic education institutions, to participate in the study. However, only participants from a range of three OEIs volunteered to participate.

7.2.4 Work situation

All participants worked in private practice, ranging from a minimum from two-and-a-half days to five days per week. Ten of the twelve participants had additional work within osteopathic educational institutions as clinic tutors and/or lecturers, ranging from one day to two-and-a-half days per week (Table 7.1). There was a range of clinical settings that participants worked in. Some participants (participants 5, 7, 9 and 12) worked in clinical settings where patient throughput was high and they were pressured by time, as illustrated by the comments below:

I see twelve to fourteen patients a day just in order to keep me ticking over... meaning that there are things that I should be doing with them that I don't, such as writing out exercises. (P5)

Most practitioners (participants 1, 2, 3, 4, 8 and 11) worked in smaller clinical settings with one or two other osteopaths. These participants tended to have more relaxed clinic schedules, and one participant commented:

My practice is in my home. It's just me, and I tend to see as many patients as I want to see and fit them around my home life with my kids and with my wife and I'm as busy as I want to be, so I still enjoy what I do. (P8, 1)

Other practitioners (participants 9, 10 and 12) worked in multidisciplinary practice settings or more specialist clinics, which involved inter-professional collaboration, as illustrated by the following comment:

We have physiotherapists, osteopaths, acupuncturists, rehab as in Pilates, yoga and yoga therapy, chiropody, massage... so it links me more in with treating the whole patient really. (P9, 1)

7.2.5 Educational experience

Educational experience included formal education such as undergraduate and postgraduate education courses which were assessed, and less formal CPD courses and learning from mentors and colleagues. Two participants (participants 1 and 12) commented that their initial undergraduate training and education continued to have a strong influence on their current practice. For those that did talk about their undergraduate training in osteopathy, they commented that the hands-on skills

(participant 12) and osteopathic theories and principles (participant 1) that they learnt during their initial training, were valuable to their current practice, as illustrated by the following comments:

In college we learnt a lot about when there are local dysfunctions within a whole body region... [so] I think it's important to treat those local problems first. (P12)

I still use the principles that I was taught as a student. Some practitioners would say maybe you should release those principles, but at present they are still very relevant to me. (P1, 1)

Some participants (participants 2, 5 and 12), commented on the importance of additional skills they had acquired during CPD training courses. For example, participants 2 and 12 commented on the integration of additional therapeutic modalities:

I now use laser therapy as well, which I find can be quite effective. (P2)

I have read lots on communication and I have done courses...and I am trained in NLP. (P12)

Almost all participants (participants 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11) felt that their approach to practice had changed significantly since their initial training in osteopathy. The importance of critical thinking, communication skills and technical handling skills appeared to feature strongly when participants discussed how their practice had changed since their initial undergraduate training, as illustrated by the following three comments:

As a student you take the tutors' ideas and run with them...but through reflection and time that you begin to scrutinise things more and reject those fads and formulate your own ideas about osteopathy. (P3)

I think communication skills weren't initially a strong point for me and I think developing them has turned me being a 'graduate' osteopath to an osteopath ten years down the line who has a busy clinic with good patient retention. So I think that's been the difference and that what's changed things for me. (P7, 2)

I've been in practice thirteen years and the way I work now is very different to how I worked initially which was mainly treating specific joints of the body– I think I came out of college thinking that spinal manipulation is really important...but now I consider the whole body a lot more [in relation to hands-on treatment skills]. (P5)

The comment from the first participant suggests that they had become more critical in their thinking compared to when they were novices, possibly as a result of their postgraduate Master's degree. The second participant highlights how their interpersonal and communication skills have developed during his time in clinical practice. The third participant focuses on the development of their hands-on treatment skills.

Participants with formal post-graduate qualifications (participants 3, 6, 7 and 10) took a critical stance of their practice and osteopathy in general. This involved them challenging practice beliefs and questioning the traditional aspects of practice such as osteopathic principles and theories (such as those discussed earlier in Chapter 3). Some participants felt quite strongly, as illustrated in the comments below:

My postgraduate interests and qualifications are probably what form my approach now and I suppose I refute the osteopathic dogma more now. (P3)

I'm very interested in challenging the traditional models because unless we actually replace the models which are defunct and have evidence that negates them, we actually won't evolve the profession any further. (P6, 1)

Participants who had undertaken form postgraduate learning, such as in the form of a Master's degree, incorporated research evidence into their practice, and they tended to recognise the scope and limitations of their practice, as illustrated in the following example:

Research evidence for hands-on treatment for a prolapsed disc is thin on the ground. It is exercise, rehab and all the other things that you can do which are more effective, and providing other options such as surgery, injection therapy and anti-inflammatory medications. And there is very little research that I have come across that manual therapy is helpful in those situations. (P10, 1)

Having a critical stance towards the traditional aspects of osteopathic practice, had led several participants (participants 3, 6, 7 and 10) to take a more psychological and social approach with their patients, as illustrated by the comment from participant 6 (overleaf), who had completed a postgraduate Master's degree in Osteopathy:

I have evolved my practice over the years, and I'm presently interested in the psychosocial aspect of disease and pain. I've been looking both academically and professionally at those areas and I have integrated them and have come to the point where I'm using a lot of the work from the biopsychosocial model. (P6, 1)

The previous comment suggests a view of practice and knowledge which is dynamic and constantly developing. In comparison, several participants (participants 1, 2, 5, 8 and 11) did not talk about the influence that research evidence had on their practice, and they appeared to take a less critical stance towards their practice and osteopathy in general. This was possibly as a result of them not undertaking postgraduate degree courses. These participants valued the technical skills used in practice, such as palpation procedures,⁶⁴ which for some was vital to their practice, as illustrated by the comments from participants 5 and 9 below:

For me palpation skills are extremely important...I think, more than any other profession. (P5)

I have got to feel [palpate] the rotation of each segment of his spine, rotation of each segment in the flesh. (P 12)

In contrast, participants with formal postgraduate training were much more critical of the relevance of palpation skills, as demonstrated by the following excerpts:

The osteopathic concept that your hands are the most important tools and that you should rely on your hands because they never lie to you is fallacious...and I have definitely modified my approach. (P6, 1)

⁶⁴ Palpation procedures involved using the hands and fingers purposefully during examination procedures, to feel for anatomical structures and to identify the 'signs' of somatic dysfunction such as pain and tenderness and restricted movement of the joints and tissues of the patient's body.

I think to say that there is a movable skull, and that we can palpate it is, ridiculous, from my own point of view... [and] I'm happy to appraise the evidence and question it. (P3)

Several participants (participants 1, 2, 4 and 12) commented on the impact of informal learning such as learning from specific individuals, such as mentors, teachers and other colleagues had on them and their practice. For example, participants 2 and 12 emphasised that when they were osteopathic students, observations of senior practitioners stood out as particularly memorable educational experiences, and that they were exposed to new hands-on treatment techniques. These experiences appeared to influence their practice, and some participants commented that as a result, they incorporated the specific treatment techniques into their own practice:

When I was a student I went and saw lots of different osteopaths, [and] did a lot of observation... [and] I saw allot of different approaches for the same thing. You know, I saw osteopaths that would never ever HVT anything, and you'd think it worked, and I would see people who did ninety per cent of their work HVT work. (P2)

A big influence on me is an osteopath I saw when I was doing student observations. He was a practitioner I really appreciated and admired, and saw him do all sorts of spinal manipulations, and I have seen some massive changes, using his approach. (P12)

In summary, participants had a range of educational experiences. Those that had undertaken postgraduate education (participants 3, 6, 7 and 10) in addition to their undergraduate training were more critical of their practice. They questioned the value of the original theories, hands-on skills and concepts they were taught as part of their initial training and they incorporated different approaches and knowledge into their practice as a result of their postgraduate learning. Several participants that had not undertaken formal postgraduate education (participants 1, 2, 8, 11 and 12), were less critical of the theories, principles and hands-on skills taught to them during their undergraduate education. Their undergraduate knowledge and hands-on skills were accepted and formed a valuable part of their current practice. They emphasised their learning experiences from observing and working with other practitioners, highlighting how these experiences developed their specific hands-on treatment skills.

7.2.6 Professional and clinical experience

Throughout the course of their practice careers, exposure to particular patients and clinical situations helped mould participants' views about osteopathy and many participants considered that they had learnt from their practice. Two participants (participants 1 and 4) commented that their early experiences of osteopathy, as patients, impacted them in different ways, as illustrated by the following comments:

When I was treated by an osteopath, I was treated by an old school osteopath...whom I feel it had a big impact on how I practice. (P1, 1)

I became an osteopath because I was treated by an osteopath... I had a bad back and I was very impressed by her treatment...I loved the idea of osteopathy. (P4)

The first participant suggests a positive experience as a patient had a lasting influence on their practice, whilst the second participant comments on how their personal experience as a patient helped to motivate them to train as an osteopath.

Those participants, who also worked in osteopathic education as clinical tutors and lecturers, commented on the impact that this work had on them and their practice. Most participants seemed to enjoy their educational roles, and felt that these experiences were valuable for their own professional development, and one participant in his third decade of clinical practice commented:

I really enjoy being a clinic tutor; I like being in that environment with the students and with the other staff. I think that it's exciting and motivating for me and it helps improve myself. (P8, 1)

While most participants spoke positively of their role as a clinical tutor, one participant (participant 4) was less enthusiastic regarding any impact it had on their practice, and commented:

I think all that being a tutor has done is add to my experience - in mainly a positive way; I have maybe gained a few things, but it's hard to say. (P4)

Participants that held educational positions commented that a teaching environment drove them to constantly reflect on their own approach to practice and develop as practitioners. Most participants commented on the responsibility to continually maintain and update their knowledge and this is illustrated by the two participants:

Every time a student corners you and questions you, that makes you go home and read and think about things. (P1, 1)

I think being a clinic tutor gives you an enormous responsibility not to mislead, or to misguide students...and it makes you cognisant of the evidence base. (P3)

Participants 6 and 9 held additional professional roles for professional conduct committees. These participants were especially reflective on their practice and appeared to be very aware of what constituted poor or incompetent practice. The comments below illustrate how these experiences influenced some participants to adopt a more reflective approach to their own practice:

Through my work with the GOsC I'm very aware that osteopaths do not always communicate particularly well with patients and so I'm getting away from "I've got to get my hands on and get them better" to "right, this is the situation and this is how we can approach it; it's your decision, what would you like to do?" So it [my approach] is becoming much more collaborative. (P6, 1)

I had to be an expert witness for somebody with a serious cauda equina syndrome that went wrong...and they were under the care of a non-registered osteopath who was negligent...I think that experience focused my mind on the importance of the [clinical] re-examination of patients. (P9)

First-hand clinical experiences in practice appeared to strongly influence participants' approaches to practice. On several occasions, participants could recall specific instances with a particular patient which had a lasting effect on the way in which they practised. Participants commented that negative experiences during their practice or mistakes made as novices caused them to learn and develop further (participants 2, 4, 8 and 12). Several participants commented on errors they had made during the diagnostic process

with patients, which included not recognising important symptoms and attributing patients' problem to a less serious condition, as illustrated by the following comments from participant 2 and 4:

One of my early patients was someone with, sacroiliac pain, she told me it was sacroiliac pain because her physiotherapist told her it was sacroiliac pain...[but] she had psoriatic arthropathy...[and] that was a big lesson for me, because, when I look back, I thought the examination didn't really add up, and the response to treatment didn't add up...so through experience I've found, that by trying to help the patient, you become gung ho, and you just make things worse. (P2)

I have had a situation once where I didn't know what was going on...I felt 50% sure that this patient had a problem with a rib. They had been referred to me by a GP who had suspected a rib problem...So it was a bit of a shock when the patient died a couple of months later. There were no red flags at all – there was no change in appetite – nothing... there were no outward signs. So that was a big wake-up call for me. (P4)

In contrast, positive experiences also influenced participants' practice, such as clinical successes or when patients expressed the positive impact that osteopathic care had had on them and their disability (participants 6, 7, 9 and 10). These positive experiences tended to affirm the potential effectiveness of their treatment and management approaches, as illustrated by the comments from participants 6 and 9:

I'm now treating third generations of patients so I treated a set of people; they had kids; I treated the kids and the kids have had kids and I'm treating them too... so I think part of the reason for that is that they value my approach. (P6, 2)

I had a very chronic patient who'd had several ops and I was feeling that I'm never going to get her better...and then she said "Do you realise how much you've helped me. I can now sit for two hours...I can go out for meals with my family...and you've made a huge difference." So that made me very aware that with chronic patients, you need to establish their expectations and have some goal-setting that is realistic. (P9)

Participants' professional and clinical experiences were wide ranging. All but two participants (participants 10 and 12) held clinic tutor positions in an OEI, and the majority of participants commented on the positive impact that this role had on

increasing their knowledge base and developing their diagnostic reasoning skills. As experienced practitioners, several participants (participants 2, 3, 4, 6, 7, 9 and 10) recalled specific positive or negative experiences in their professional careers, which caused them to learn and develop their clinical reasoning and practice.

7.3 Professional views

Participants expressed a range of views in relation to many different aspects of osteopathy. These are divided into; professional identity, views of traditional osteopathic theories and principles, views of health and disease and views on clinical practice. These are presented below.

7.3.1 Professional identity

There was variation in how participants viewed themselves as osteopaths in the wider context of healthcare, and how also they viewed osteopathy in relation to other health professions, which together constituted their professional identity. Five participants (participants 1, 4, 5, 11 and 12) considered that as osteopaths, they were especially different from other healthcare professionals, and that osteopathy was defined by distinct osteopathic values, skills and knowledge. These participants looked to defend osteopathy, and frequently drew comparisons with other similar health professions to highlight professional differences, as illustrated by the following excerpts:

Chiropractors and physios don't seem to have that truly holistic approach that we do. (P5)

I think we look at the person, more as a whole, than the average doctor would...and that is hugely important and that is why I wanted to become an osteopath and not a doctor. (P4)

I have a value and belief that what osteopaths do can make a big difference to somebody. (P12)

The first two comments demonstrate that some participants considered that osteopaths had considerable strengths when compared to other healthcare professions, while the third quote illustrates that some participants had a strong sense of personal belief in the osteopathic approach to care. These participants tended to adopt a more traditional approach to osteopathic practice (discussed later in Section 7.3.2), and they felt strongly

that the specific skills and theories which they possessed were central to their practise of osteopathy, for example:

Osteopathically it is our philosophical idea that is central to osteopathy. (P1, 1)

In my opinion palpation is essential to the osteopath. If you don't know what is underneath your fingers then don't touch the body. It's as simple as that. (P12)

In contrast, four participants (participants 2, 3, 6 and 10) did not consider osteopathy as being a discipline which was particularly distinct from other similar healthcare professions. These participants were more likely to highlight the similarities of osteopathy compared to other professions. This variation is demonstrated by the comments from three participants below:

I don't think that osteopaths do anything which is particularly unique, to be honest. (P6, 1)

If you go with shoulder pain to a physio, a chiropractor, and osteopath, it's the same thing...we're all dealing with the same things. So I think over the years we're probably getting to the point where we're all beginning to look at things quite similarly. (P2)

I don't think what we [osteopaths] do is new... the chiropractors have been doing that for quite a while, physios do the same, massage therapists do the same, even Rolfers do the same. (P3)

Two participants (participants 9 and 10) worked in multidisciplinary clinical environments which may have promoted inter-professional collaboration resulting, in an appreciation of the similarities (rather than emphasising the differences) between osteopathy the other healthcare professions, as illustrated by the following comment:

...other professions do exactly the same thing as us...certainly the ones that I have worked with. (P10, 1)

Having a strong osteopathic identity held less importance for three participants (participants 3, 6 and 7). For them, clinical practice entailed more than the application

of osteopathic skills and knowledge, and they appeared that they were self-assured in their own personal style and approach to practice, for example:

I like to see myself as rather than just being an osteopath who does osteopathy, but rather as me being a person who will actually help facilitate their recovery. (P7, 2)

I'm not concerned about being called an 'osteopath', it is just a professional title that allows me to do what I do with my patients...and the word 'osteopath' is not important to me, the word clinician is better. (P3)

Overall, there were some participants that had well defined professional identities (participants 1, 4, 5, 11 and 12) and frequently defended the distinctiveness of osteopathy by emphasising what they considered to be the strengths compared to other healthcare professions. Strong features of their professional identity were their specific osteopathic hands-on skills, knowledge and theories which separated them from other professions. There were other participants who were ambivalent (participants 2, 3, 6 and 10), and did not emphasise inter-professional differences or a particularly distinct osteopathic identity. They focused on developing their own practices as individual healthcare professionals as opposed to distinct osteopathic professionals.

7.3.2 Views of traditional osteopathic theories and principles

Participants had a wide range of views on the traditional osteopathic theories and principles, such as those reviewed in Chapter 3. Several participants (participants 1, 2, 8, 11 and 12) valued the osteopathic principles and considered that these formed specialised osteopathic knowledge. These principles and knowledge tended to inform and guide their practice. A range of views are illustrated by the three following comments:

As long as you keep pure to the osteopathic philosophical idea...and I suppose I still operate from a more old school point of view, where I will use palpation, and joint assessment to tell me what to do...because the principle of removing an obstacle in the patient's body, from an osteopathic point of view, is very important to me. (P1, 1)

The osteopathic concept that the body is its own medicine chest is one that I very much believe...[and] that's where I think my approach becomes osteopathic is to I try and see "well, why is it injured?", "why has it not got better?" (P12)

I think there's only one osteopathic principle, which is what A.T Still discovered, which is that you could treat any symptom by working on the body... If you adjust the body's framework, then you can treat anything. (P2)

The previous comments suggest that some participants perceived that osteopathy incorporated unique models of health, illness and diagnosis. These participants tended to consider that the traditional principles should remain unaltered over time, and that the original ideas and theories derived from important individuals within the osteopathic profession were valuable to inform their practice. However, participants' views varied as illustrated by the two participants below:

The philosophical thoughts of Andrew Taylor Still and those people are what I've always gone back to. I've always read the old osteopathic stuff; I use it as a spring board. (P1, 1)

I'm not so convinced on a lot of the Andrew Taylor Sill stuff... I'm not sure that I'm following the principles. (P5)

The first participant suggests a less critical approach to practice, relying on the application of specific osteopathic theories to their practice; the second participant suggests a more critical stance towards the original theories and principles of osteopathy. Three participants (participants 3, 6 and 10) thought that adhering to the traditional principles was preventing the osteopathic profession's development. Some participants (participants 3 and 6) who were involved in osteopathic education tended to feel strongly that the profession needed develop and modernise. This is demonstrated by the comments from participants 3 and 6 who were both held educational positions within two different OEIs:

Certain osteopathic institutions tend to teach based on treatment algorithms that seem to be modified from the sacred texts of osteopathy...but I like to give students the freedom to challenge the accepted dogma. (P6, 1)

I think A.T. Still may have had a good idea at the time, but I think for us to still remain by the book, like he's some form of deity, is absurd...and I don't believe that we should be obsessed with the principles of osteopathy, like movement dysfunction, or positional lesions, I've thrown them out the window. (P3)

However, four participants (participants 4, 7, 9 and 11) made no reference to the osteopathic principles, which may suggest that they did not play an explicit role in their practice or that the principles were so implicit in their practice that they did not think to discuss them. Those that were critical of the traditional osteopathic theories (participants 3, 6 and 10), had formal postgraduate training as well as holding educational positions, and they were confident in challenging the traditional ideas and beliefs of osteopathy, as illustrated by two participants who commented:

...there are the traditionalists that have this very old-fashioned, paternalistic type approach to patients...which I don't think is doing the profession very much good at all. (P6, 1)

I think there's a danger that some osteopaths are adhering to dogma and self-indulgent practice, I think that's probably not the place for it, I think after all you've a job to do and that's to help get people better. (P3)

Overall, the variation in views suggests that there were participants who embraced the traditional osteopathic theories and concepts applied these theories to their practice (participants 1, 2, 8, 11 and 12). Other participants (participants 3, 6, 7, and 10) were more critical of specific osteopathic principles and theories suggesting that they played a less important role in their clinical practice. These participants appeared to be more comfortable developing their own approaches and ideas of practice.

7.3.3 Views of health and disease

Views about health and disease varied amongst study participants. Almost half the participants (participants 1, 2, 5, 8, 11 and 12) expressed views which emphasised the physical and physiological aspects of the patient's problem. These participants placed less significance on the emotional and psychological experiences of the patient, and when talking about their practice of osteopathy, they focused strongly on the patient's body, physical structure and biomechanics. This suggests that they viewed patients'

problem through a predominantly biomedical lens, as demonstrated by the participant below:

...if you know that the problem in the knee is being caused by excessive rotation of the pelvis, then the [knee] ligament will be overloaded. So my work is to treat the compensations of the patient's body. (P1, 1)

With this view, participants were more likely to reduce their patients' problem down in a specific tissue or body structure. These participants tended to place high importance on manual skills to treat and assess the patient, and in particular the identification of dysfunctional regions in the patient's body and tissues. Participants that emphasised the biomedical aspects of disability, such as pain and physical dysfunction (participants 1, 2, 5 and 12) were appeared to view the patient's problem as separate from their social and emotional circumstances, and there was an emphasis on clinical propositional knowledge such as anatomical and biomechanical facts to their inform practice. This is illustrated by the three comments below:

My focus first of all [is to] try and find the tissues causing symptoms, that's what I want to get out of the examination, first and foremost, so that I can satisfy myself that this is this is a facet lock, facet strain, a disc prolapse, or whatever. (P2)

If I can find the exact action that produces pain then I can have an idea of what kind of tissue is involved and start to think about treatment. (P5)

If you don't have the basics like anatomy and physiology you are never going to get the right decision. If you know your basics you can get to the right decision very quickly. (P12)

The previous comments suggest that for several participants, the application of propositional knowledge in the form of biomechanics, anatomy and pain mechanisms was central in determining and isolating the cause of patients' problems. This implies an approach to practice which involves following rules to predict and direct patient management. A biomedical view of health and disease resulted in several participants (participants 1, 2, 5, 8 and 12) emphasising a clinical examination approach directed towards discovering and separating out an 'objective dysfunctional entity' as demonstrated by the following two comments:

So if the patient comes in with pins-and-needles in his legs and it is due to some sort of femoral nerve problem, as opposed to let's say a sciatic irritation, I need to establish where the pins-and-needles are to give me a clue to where to look for specifically. (P12)

The idea is to identify the local problems within the knee and clear the symptoms with a treatment. (P5)

Several participants (participants 3, 6, 7 and 9) considered patients' problem in the context of their lives and their illness experience, suggesting a broader psychosocial view of health and disease, as illustrated by the two comments below:

I like to see the other factors that would be influencing the way that they [the patient] experience their problem...it gives you a much rounder picture of the person you're treating. (P6, 2)

My examination is a very patient specific functional assessment [to get] an overall picture of their pain and coping with their ability to cope with the pain, and how it goes up and down in order to get a real picture of what we're dealing with and also how the person is dealing with it. (P9)

Several participants (participants 3, 4, 6, 7 and 9) considered and explored patients' pain and dysfunction in the context of their family, work and social life. These participants commented on the importance of considering the multiple factors which impact patients' pain and disability, and suggest an emphasis on the psychological and social aspects of health and disease, as illustrated by the following excerpt:

I believe that you should always consider the physiological and psychological aspects of the patient and how those areas relate...and that's what I consider holistic. (P7, 1)

Overall, participants viewed health disease in different ways. About half of participants (participants 1, 2, 5, 8, 11 and 12) appeared to separate out patients' physical and mechanical problem from their lived experience and social circumstances. These participants were motivated to reduce and isolate the physical dysfunction, implying a biomedical view of health and disease. Several other participants (participants 3, 4, 6, 7, 9 and 10) saw the patient's pain and dysfunction as part of 'them' and their everyday

life, activities and experiences. This suggests that these participants adopted a biopsychosocial view of health and disease in their clinical practice.

7.3.4 Practice views

There was variation in how participants viewed and talked about their own clinical practice. Several participants (participants 1, 2, 8 and 12) emphasised that their practice entailed following and applying the osteopathic principles and theories. Four participants (participants 4, 7, 9 and 11) did not talk of specific osteopathic concepts or theories, implying they were less important to them, or were implicit in their practice. Three participants were critical of the osteopathic principles and their relationship to their practice (participants 3, 6 and 10). The comments below illustrate the variation in views:

You have to think osteopathically, 'What are the fluid mechanics like there? What's happening? Are the tissues being bathed?'
(P8, 1)

The principles of osteopathy are instinctive to me [and] they make me do what I do. (P1, 1)

And an extreme and opposing view is provided from participant 6:

They [the osteopathic principles] were just musings of an old man... [and] they're just observations of physiology from the late eighteenth century rather than directives. (P6, 1)

All participants employed hands-on skills in their practice; however there was wide variation in emphasis and the importance that manual techniques played in examination and treatment. Half of the participants (participants 1, 2, 5, 8, 11 and 12) emphasised the importance of hands-on osteopathic skills and that their practice entailed performing specific techniques in combination with traditional osteopathic theories and principles. Of the half of participants that placed less significance on hands-on skills (participants 3, 4, 6, 7, 9 and 10), there were two participants (participants 6 and 10) that appeared very critical of the 'hands-on' aspects of osteopathic practice. This variation in the perceived importance of hands-on skills is demonstrated by the following two comments:

Usually my treatments will start with quite a lot of palpation and soft tissue – I use soft tissue techniques with 95% of my patients...to loosen the tissues and developing into joint work, HVTs, mobilising [the joints] once you've softened the tissues. (P5)

I think a lot of the hands-on stuff is nonsense. I think it is just trying to loosen the patient off and make him feel a bit better, and make him feel a bit more relaxed. (P10, 1)

Participants that emphasised hands-on techniques and skills (participants 1, 2, 5, 8, 11 and 12) used their technical expertise to try and discover the biomechanical impairment which was causing the patient's pain and dysfunction, enabling them to direct treatment to the patient's body, often with the goal to restore the patient's movement. The comment below illustrates this view:

In my book the only reason why the patient has actually come to your practice is they have lost the ability to move in a certain direction. (P1, 2)

In contrast, those that didn't emphasise hands-on skills in their practice (participants 3, 4, 6, 7 and 10) tended to place significance on the use of their interpersonal and communication skills in addition to hands-on skills alone. This enabled them to relate to the individual person and understand the personal circumstances and meaning of patients' pain and dysfunction. This is illustrated by the following comments:

You need to communicate with the patient, so that you have an understanding of them, and it gives you a much rounder picture of the person you're treating. So, it is very person-centred and for me that's extremely important. (P6, 2)

The communication skills that I have do not just make the patients like me...they help the patient to trust to me. (P7, 2)

This suggests that participants that emphasised communication focused on establishing rapport and maintain an empathetic and trustful therapeutic relationship with their patients. This appeared to be of greater significance than analysing the specific physical and biomechanical characteristics of patients' movement dysfunction.

The majority of participants commented that patient education in some form featured in their clinical practice, in addition to hands-on manual therapy skills. Only two participants (participants 1 and 12) did not comment on the role that patient education played in their practice. For several participants, education involved working with patients to achieve the skills to self-manage their health problem, for example:

An awful lot of what we see is brought upon by the patients' bad habits or lack of knowledge and so with education it's all potentially preventable or self-manageable. (P6, 2)

However there was variation in how participants talked about patient education. Some participants (participants 2, 5, 8) considered that education mainly involved telling patients what they considered the problem to be, and then give them management advice. Other participants (participants 6, 9 and 10) spent more time on the educational aspects of patient management. They focused on working with patients to help them develop a deeper understanding of the problem. This variation in education is illustrated by the two comments below:

You need explain to the patient, sit them down properly and tell them a) their diagnosis and b) the prognosis and why they've got that problem in the first place, and you explain to them what you're doing and why you're doing it. (P5)

I don't cure them. Together we work out how come to a better state of health. (P9)

The first participant suggests that their approach to patient education involved transferring knowledge and giving advice in an instructive fashion. It suggests an imbalance of knowledge between participants and their patient, with the participants perceiving themselves as being central to the learning process. In contrast, the second participant suggests an educational approach which encouraged working together with the patient to share knowledge and facilitate learning.

Those participants that emphasised patient education (participants 3, 6, 9 and 10) tended to take an approach to teaching which encouraged knowledge sharing rather than just giving advice and instructions. They sought to help patients to self-reflect, and they

supported them to learn and develop new skills. These participants considered that through education they could facilitate patients to make knowledgeable and informed decisions about self-managing their problem, for example:

I think osteopathic care is about helping to educate the patient; it's about empowering them to be able to look after themselves and to make the most of their life. (P6, 2)

However, for several participants (participants 1, 2, 5, 8 and 11) patient education appeared to be inferior to hands-on manual therapy treatment. When this was the case, their approach to education appeared to be didactic in nature and involved instructing or telling patients and giving advice. This is illustrated by the two comments below:

Every patient of mine goes away with a sheet that has standard osteopathic advice...and exercises and hydrotherapy written on a piece of paper. (P5)

I'd explain [to the patient] what I'd want them to do, demonstrate it, I tell them how many times I think they ought to do it, re-check when they come back to see that they're still doing it properly. (P8, 1)

In summary, participants held a range of views in relation to their professional practice, and these are illustrated in Table 7.5 below.

Professional views
Professional identity
Views of traditional osteopathic principles and theories
Views of health and disease
Practice views

Table 7.5 Participants' professional views

Participants' professional views (Table 7.5) formed an overall view of the nature of osteopathy, and there was variation in how participants described osteopathy and their

own clinical practice, resulting in three distinct ‘views of osteopathy’, which were: *practitioner-centred*, *collaborative*, and *empowerment*. These are summarised in Table 7.6 and are discussed below with illustrative comments provided.

View of osteopathy
Practitioner-centred
Collaborative
Empowerment

Table 7.6 Summary of participants’ views of osteopathy

For half of the participants (participants 1, 2, 5, 8, 11, and 12) a central feature of osteopathy and their practice was their application of specific osteopathic theories and hands-on techniques. These participants emphasised their knowledge and their technical skills, suggesting a *practitioner-centred* view of osteopathy, as illustrated by the following comment:

I need to know what I am treating... [and] I have got to know what the diagnosis is, so that I can get behind the reason for it and I can treat it. (P12)

Participants with a practitioner-centred view emphasised applying propositional knowledge and osteopathic theories in combination with their hands-on skills to discover and treat patients’ physical dysfunction. They possessed a view of health and disease which focused on patients’ biomedical impairment. These participants defended and highlighted their professional distinctiveness, and possessed a particularly strong osteopathic identity.

A *collaborative* view of osteopathy resulted in participants placing significant value on working with patients so that decisions could be made together. These participants (participants 3, 4 and 8) emphasised collaboration and partnership with the patient, respecting them as an equal, for example:

I really need the patient to be on side and to work with me...because it facilitates a better relationship that I have with them. (P3)

Participants with a collaborative view of osteopathy tended not to strictly apply osteopathic theories and rules to their practice. For them, using their interpersonal and communication skills to develop a therapeutic partnership with the person was central to their practise of osteopathy. These participants did not consider themselves as distinct osteopathic professionals; they saw themselves as individual healthcare therapists. They endeavoured to understand the patient's pain physical dysfunction in the context of their lived-experience and social situation, and communication was an important part of developing this understanding. In this regard they possessed a view of health and disease which considered the psychological and social aspects of the patient and their problem.

Other participants viewed practice as a means by which they could facilitate patient *empowerment*. These participants (participants 6, 9 and 10) could not separate patient empowerment from their practise of osteopathy, and aiding patient learning formed part of all their treatment and management interventions. These participants considered that education was central to their practice, which enabled them to facilitate patient empowerment and self-management. This is reflected by the following comment:

I really believe in this notion of patient autonomy and I think patients are responsible for themselves...and... if they can work out why it's there and what they can do to stop it or control it, it gives them back their control. (P6, 1)

Participants that viewed osteopathy as empowerment emphasised educating patients through sharing knowledge. They considered the patient's problem in the context of the daily lives and how it impacted their day-to-day functioning. These participants were critical of the traditional osteopathic principles and theories and felt that hands-on skills alone were insufficient to help the patient self-manage their problem.

7.4 General clinical practices and procedures

General clinical practices and procedures referred to participants' actions and interactions with patients during examination and assessment procedures, treatment interventions, case-history taking, listening and talking to patients in the context of their clinical practice. These procedures are divided into:

- Diagnostic reasoning
- Examining and assessing patients
- Treating and managing patients

7.4.1 Diagnostic reasoning

A major goal of all participants was establishing an explanation of the patient's problem. Their diagnostic reasoning process⁶⁵ enabled all participants to differentiate between a potentially serious pathological cause of the patients' problem and whether this was within their expertise and scope of practice. Examination procedures enabled participants to acquire cues which would help them develop hypotheses and guide further examination and treatment. Regardless of their view of osteopathy (practitioner-centred, collaborative, or empowerment), all participants were interested in the precise nature and behaviour of the symptoms such as location and character of pain, as demonstrated by the following comment:

The elements of the case history, the nature and the onset of the pain, diurnal variation, and those kinds of things will tend to lead me towards a certain diagnosis more than others. (P7, 1)

For all participants, initial cues formed the basis of ideas or hypotheses about what might be the cause of patients' condition, and all participants directed their reasoning towards 'sieving out' a potentially serious cause of patients' symptoms, for example:

I'm trying to decide "bi-lateral leg pain- where does that leave me"? And I am thinking "is there some sort of aneurysm? Is it degeneration on both sides of his spine? Is there a normal reason for that going on?" (P12)

⁶⁵ In this context 'diagnostic reasoning' refers to a specific aim of participants' clinical reasoning which in this case, was to formulate a diagnosis related to patients' pain, physical disability and associated symptoms.

I make sure that I do my best to rule out anything that I shouldn't [treat] – I'm working with my fear that I don't want to start treating pathology or something non-musculoskeletal. (P6, 1)

Several participants (participants 1, 2, 3, 5, 6 and 11) commented that their hypotheses were evaluated by acquiring more cues via specific questioning and clinical examination procedures, which resulted in hypotheses being modified, accepted or rejected. The comments below demonstrate cue-based hypotheses generation and testing:

Initially I look for associated symptoms, in order to pinpoint dysfunction or tissue causing symptoms, or perhaps more centrally maintained pain states. (P3)

If they've come in with left-sided chest or heart problems I'd be doing a cardiovascular screening, so I always test the most dangerous things first. (P5)

If the patient was complaining of posterior thigh pain, I want to determine what I think is the structure and where that is being in some way compromised in its function if the person's presenting with paresthesia in the limb or in the hands or the feet. I want to know which nerve root is involved. (P8, 1)

All participants commented that when they were faced with unfamiliar symptoms, they employed a deliberate process of collecting clinical information, developing and evaluating their hypotheses and evaluating. This process tended to occur when they were confronted with a challenging, complex or unfamiliar problem, and two participants commented:

I rarely now, in practice write out a list of differentials, sometimes I do when I'm really stumped. And, you know, I, if I really haven't got a good clue, then I spend a few seconds just thinking what it could be, and write it out. (P2)

If somebody is exhibiting signs that they're not improving I'll sit back and re-think about it, and really go through the process again. I'm thinking about maybe it's something systemic, have I missed anything in the prostate, in the abdomen and anything else gynaecologically; I need to really think about why the back pain isn't getting any better, so it's almost taking the process into a much more focused and logical process than by doing it by intuition. (P5)

When encountered with a challenging problem or one which was unfamiliar to them, all participants would adopt a logical and step-by-step approach to diagnostic reasoning. All participants formulated ideas and hypotheses about the cause of the patient's problem by obtaining symptom-based cues from the patient during their examination and history taking. Some participants emphasised the biomechanical features of the patient, and focused on obtaining cues from a physical examination of the patient's body (participants 1, 2, 5, 8, 11 and 12). Other participants (participants 3, 4, 6, 9 and 10), focused more strongly on the psychosocial aspects of the patient and sought to generate knowledge through talking and listening with the patient during the case history, for example:

Immediately I could see why the neck wasn't allowing that movement and why he was hesitant to do that movement. And it was quite frankly already there when he sat there. (P11)

If person comes in and says that "I've got pain and I've been coughing and sneezing and it happened when I was lifting up something very heavy. I can't stand straight; I'm listing off to the left-hand side and getting pain down my right leg with some tingling". I'm immediately thinking that this looks like a typical picture of a disc with some sort of radiculopathy and somatically referred pain to the leg. (P6, 1)

The first participant appears to acquire cues through observation of patients' physical movements, whilst the second participant focuses on the patient's story and emphasises the importance of how the patient describes their symptoms. Both participants appeared to recognise clusters of cues and the relationships between symptoms, suggesting they related these patterns of cues to previous clinical experiences. Several participants (participants 1, 2, 4, 6, and 11) commented on the ease of which they could arrive at a diagnosis, especially when they encountered a patient with a problem which appeared simple or similar to previous experiences, as illustrated in the following examples:

I am eighty per cent of the way there just after the case history and questioning, and usually that twenty per cent confirmation takes place during the rest of the time...You build up a better repertoire of remembering pain patterns and onset causes and histories, and so on. And that back catalogue of data that helps you get to an answer quickly. (P4)

I look at the patient's age, region of pain, area that they had the problem. Then immediately start thinking, well what is it likely to be, just based on the symptomology.... so by the time I finish the history I think O.K, I think this persons got either, a rotator cuff tendonopathy, or it could be referred. (P2)

Recognising relationships between clinical cues, such as specific clinical signs and symptoms, meant that hypotheses could be verified and confirmed through further clinical assessment, enabling participants to construct a diagnosis more efficiently, in less time and with less effort. If a pattern was recognised, participants could immediately evaluate and test their hypotheses, as demonstrated by the following comment:

My mind might be thinking this is a typical facet joint problem...so I will go through the procedure of looking above and below and those joint closer to examine them. (P1, 1)

In summary, for all participants, diagnostic reasoning constituted a safety procedure whereby they ruled out a serious cause of their patients' problem. All participants, regardless of their view of osteopathy showed flexibility in their diagnostic reasoning and could move between hypothetico-deductive and pattern recognition approaches. Hypothetico-deductive reasoning would be taken when confronted with an unfamiliar or complex problem, so that participants could deliberately and carefully collect clinical data and consider possible diagnoses. Alternatively, when faced with a familiar or simple patient presentation, participants could draw on their previous experiences and recognise meaningful patterns and relationships between symptoms, enabling them to develop a diagnosis quickly and efficiently.

7.4.2 Examining and assessing patients

Examining and assessing patients during clinical practice was characterised by participants participating in a constant process of action, cue generation and interpretation, followed by further action. Cues were generated in the form of verbal

conversation with the patient, and non-verbal cues such as tactile cues (for example, palpatory joint and soft tissue assessment) and visual cues (for example, observation of posture and movement). Participants interpreted these cues which guided further action. This formed a 'stream' of interpretation-action-interpretation, which occurred throughout the entire patient encounter, but was most notable and purposeful during the examination period, as the illustrated by the following comments:

I just want to get a sense of his back, I wanted to have a feel of it, see how it is moving, and see if he is getting any reactive twitches or protective mechanisms going on. Get a sense of how much movement he has got and sense the tone in the muscle. (P10, 1)

I'm thinking "what is going on in that curve of the spine"...and "what is happening in this part of their spine in that area"? "Where is that area and how is it in relation to the bit above and below it"? (P12)

During examination procedures there was variation in how participants generated cues and knowledge of the patient and their problem. This influenced the focus of their attention and the nature of their associated interaction with patients. Some participants focused their attention on the patient's body, while others tended to talk and listen to patients, as illustrated by the following three comments:

The shape of the spine is important because you can see where it is in space...and I'm interested in the posture of the lower limbs and of the pelvis too...it informs me in terms of how I'm going to proceed. (P8, 1)

I pay quite allot of attention to how a patient has pain throughout the day and throughout their life...[and] pain to me is what the patient says it is, so I'm really less concerned with optimal functioning of biomechanics and optimal symmetry...I'm more concerned with what the patient's pain means to them. (P3)

I spend a lot of time exploring the impact of this person's change in function in their own words so, I'll use their functional loss as a benchmark for them so it means that I need to capture that in the words that they use rather than translate it into something 'scientific'. (P6, 1)

The first participant emphasises the physical characteristics of the patient, attending to cues relating to patients' body such as the movement, structure and shape of tissues, which guide clinical action. Central to this participant's examination is the analysis and interpretation of cues obtained from skilful palpation and observation of the patient's body, and was also considered essential for several other participants (participants 1, 2, 5, 8, 11 and 12). The second comment demonstrates that some participants (participants 3, 4 and 7) placed clinical value on how patients experienced and perceived their problem, such as how they talked about their personal experience of their pain and dysfunction. These participants were less concerned with obtaining cues from examining the patient's body, and placed significance on how the patient conveyed the personal meaning of their problem. Finally, the third comment illustrates that some participants (participants 6, 9 and 10) emphasised the verbal information relating to the patients' functional daily activities, and using language to develop a specific and 'real life' understanding of the patient.

Obtaining information about the patient through hands-on physical examination of the patient's body appeared to be a priority for several participants (1, 2, 5, 8, 11, and 12). These participants tended to visualise patients' biomechanics, anatomy and physiology during assessment procedures and they considered that these techniques would provide information to understand the patient and their body. They emphasised their hands-on skills in practice, using their manual techniques to touch and move the patient during examination procedures, and they felt that the patient's body was a continuous and significant source of knowledge. This is illustrated by the following three participants:

I'm asking the body the questions of, 'why are you irritated', 'what's happening'? So I'm searching. And therefore then I'm going to change what my hands and my mind tells me to change. (P1, 1)

I let my fingers do the palpating and I'm thinking about then the quality of tissues, and quality of movement. (P8, 2)

I am looking at the areas of his back which is the most restricted. And as I watched him do the active shoulder girdle examination, I saw the lack of the movement there. I was trying to get movement into that area to take the load off the neck. (P11)

While all three comments suggest an approach to patient interaction which was body-focused, there were differences in how participants generated information from the patient's body. The first two participants suggest that their knowledge of anatomy and skills in palpation of the patient's body and tissues was significantly important for them during examination procedures. The last comment suggests observing the patient's movement and biomechanics was the focus of their examination. This last participant emphasises a relatively simple, and predictable interaction between what he observed (lack and movement) and his intended treatment objective (improve movement). Such a focus on separating out and observing the patient's physical dysfunction is suggestive of an epistemology of practice knowledge which emphasises propositional knowledge such as the anatomy and biomechanics relating to the patient's body.

Several other participants (participants 1, 2, 5, 11 and 12) applied similar simple rules during examination, and it appeared that they also perceived practice as being relatively predictable and uncomplicated, as demonstrated in the following excerpts:

...if the patients problem is due to osteoarthritis of the hip, then you must appreciate that the osteoarthritis has caused a shortening through the hip musculature and therefore you have a two plan direction, one is to maintain as much movement as possible in the hip region and one is remove their pain (P1, 1)

If somebody's got left-sided low back pain and their pelvis tilts down to the right then the structures will be more compressed on that left side. (P8, 1)

The comments above imply that some participants held more positivist views of knowledge, and took approaches to clinical examination which focused on applying technical skills and propositional knowledge, resulting in a technical rational approach to practice. In doing so, these participants appeared to focus on establishing cause-effect relationships between the patients' reported symptoms and physical impairments of their body.

Participants that focused their examination on patients' bodies (participants 5, 8, 11 and 12) were focused on obtaining new propositional knowledge through the application of technical procedures and rules, and one participant commented:

...a lot my practice is based on genuine biomechanical stuff...and manual provocation techniques to reproduce their symptoms are some of the best diagnostic tools...because then you know you're hitting the spot and you've identified the reason for the problem. (P5)

Participants that focused on obtaining knowledge from patients' bodies, through hands-on techniques and procedures, placed less emphasis on talking and listening to the patient (participants 1, 2, 5, 8 and 12). For them, the body 'spoke and communicated' and was a constant source of information. This body-focused approach to examination and assessment is illustrated by the comments from two participants:

I'm being told what to do by what the tissue tells me. So I'm not deciding what to do, I'm trying not to do that. (P1, 1)

..the sense of touch and the sense of restriction, palpation helps you to identify tissue lesions or restrictions and it has become more sensitive...it's about feeling and identifying areas of cold, stiff, tense muscles...compared to much more fluid, dynamic, warm, [and] soft areas. (P5)

Both participants above regarded touch as a highly valuable technique of clinical assessment, as did others (participants 2, 8 and 12). However, the first participant regards palpation skills as the main cue-acquiring tools, enabling him to be less deliberate in his reasoning, placing considerable trust his hands to guide his clinical actions. This suggests an approach which is deliberate in being less reflective and less critical, whereby significant confidence is placed in their technical skills and expertise, such as palpation and examination procedures.

For others (participants 3, 4 and 7) talking and listening were important ways by which to develop knowledge about the patient, in addition to hands-on examination skills. They were more concerned with, and valued the social interaction and conversation with the patient which occurred as part of the assessment. The following two comments illustrate these differences:

I can perform the hands-on stuff in the background which leaves me the capacity to talk to the patient, ask them how they are, what they've done this week...because I'm concentrating on developing a relationship with the person. (P7, 2)

I said to him [the patient] – ‘you just fall asleep for a few minutes if you want’; I wanted to really concentrate on what I was doing for the gross mechanical assessment of his thoracic spine. (P12)

The first participant emphasised focusing on social interaction during their hands-on assessment with the patient. They sought to engage the person in conversation and explore their personal circumstances, both of which helped facilitate patient rapport. Whereas the second participant focused on their sense of palpation and interpretation of cues from the patients’ bodies, and actively engaging with the patient appears to be less important. While the second participant is reflecting on his actions with a particular patient, the strong focus and concentration on hands-on skills which he uses to acquire movement cues seems to suggest a certain amount of the patient passivity during his examination.

By emphasising verbal communication with their patients, some participants (participants 3, 4 and 7) sought to work with patients to construct an understanding of their personal meaning and experience of their condition. The importance of developing a deeper and more personal understanding of the patient is summarised by participant 7:

This notion of getting to know the person underneath the patient mantle is really important for me—it is absolutely vital. (P7, 1)

The previous comment suggests a motivation to develop a multidimensional understanding of the person in addition to the movement and postural characteristics of their body. Participants that emphasised communication and patient understanding appeared to recognise the complexities and uncertainty of practice; they placed less emphasis on the application of specific technical skills during examination. These participants (participants 3, 4, 6, 7 and 10) tended to take a complex view of patients, a view that recognised patients’ individual experiences and personal meanings. They appeared to ‘blend’ different types of personal knowledge and interpersonal skills to make decisions rather than relying on explicit propositional knowledge and osteopathic technical skills, implying a creative and improvised approach to practice, akin to professional artistry, as illustrated by the following two participants:

I put all of the information that I've got from the examination coupled with a whole load of other things such as patient expectation the relationship that I have got with the patient and I put every influential factor in the melting pot and then I draw on all of it to point us in the right direction. (P10, 1)

I think there's probably a lot of unspoken communication about how I'm engaging the patient, and I would actually judge things like treatment by how I relate to them personally...and I suppose the process that guides that is really a relatively artisan process that I feel in myself. (P3)

The above comments suggest that social interaction in the form of talking, listening and relating to patients, led these participants to develop valuable knowledge of patients' emotions, values and feelings. This provided them with a deeper and contextual understanding of the personal meaning of patients' pain and dysfunction. Participants 3, 4 and 7 were particularly focused on listening to the person's words, stories and experiences as part of their examination approach, which they found helped to facilitate an understanding of individual the person. This person-focused approach is examination and assessment is illustrated by the following excerpts:

I find I'm very tired at the end of the day and I find my jaw muscles are sore because I seem to talk so much to patients, but I find that talking opens up a deeper level of understanding for them and me. (P3)

I like to interact with people, to get into their mind and see how they are feeling. (P4)

These participants (participants 3, 4, 6, 7 and 10) embraced the idea that there was more to a patient than their physical pain and dysfunction, and they were motivated to understand the patient's perspective and social contexts of their problem. This is suggestive of an epistemology of practice knowledge akin to constructionism.

In contrast, participants that preferred hands-on manual treatment (participants 1, 2, 5, 8, 11 and 12) were less likely to emphasise listening, learning and talking with patients. They tended to want to get 'down to the business' of performing the osteopathic examination, as summarised by the comment from one participant:

I don't want to spend time using words and wasting what I feel is valuable time, when I can get on with the job and try to achieve my goal. (P1, 2)

The above comment suggests an avoidance of social interaction during examination, whereby the participant is primarily concerned with a one-sided acquisition of knowledge, implying a practitioner-centred approach to examination, and one which is focused on technical hands-on skills.

Three participants (participants 6, 9 and 10) had a strong focus on talking and listening to their patient during their examination which enabled them to develop knowledge of the motivational and behavioural aspects of the patient. This is patient-focused approach to examination and assessment is reflected in the comments below:

I like to explore their day-to-day function, so I check things like can they get themselves dressed can they feed the cat and are they happy...and I ask them "How do you feel about it?" (P6, 1)

I try to get quite a clear picture of all the things that bothers them, things like "How is walking?" and "Can you walk indefinitely?" So I get timings on things because it helps me to get a handle on their pain. "Can you put your shoes on?", "How's combing your hair?" so that, you get something that's really functional that the patients do that bothers him...so it's whatever's specific to that patient. (P9)

The previous comments suggest that for these participants, patients' stories were a powerful way to learn about their functional problems and the impact it had on their lives. This patient-focused approach to examination and assessment helped them to work with patients to develop personalised treatment and management plans.

All participants had an element of routine to their clinical examination, and most commented that the precise choice and order of examination procedures would vary depending upon the nature of patients' symptoms and information acquired during case-history taking. The following comment illustrates this flexibility:

I try to stick to a routine but then everybody is different ...but the routine is flexible. I can change depending on the person, depending on the presenting problem. So, it's not set in stone. (P8, 1)

However, there was variation in the degree of flexibility of participants to adapt their examination routine in response to the individuality of the patient, their problem and situation. This variation is illustrated by the following comments:

I will go through the postural examination every session [and] I will never miss the physical examination, because it is there to show you how the patient moves, it doesn't matter what the patient thinks about it. It is information for you, which tells you what the patient is able to do. (P1, 2)

I have had one situation where a patient refused to have a postural observation, and I asked them to leave the clinic, because the standing examination is what I feel has to happen with any consultation. (P12)

My [clinical] examination isn't the same every time, it's an organic thing...and it depends on how I feel they are because it's very important for me that the patient feels comfortable. (P3)

The first two participants emphasise the importance of the patient's body in their examination, and in particular their own need to examine patients' body-shapes, structures and postures. With such a strong focus on the body, they appear to be far less flexible in how they structure and carry out examination procedures, and less willing to significantly alter their approach in response to the patient. Obtaining knowledge of the patient's body through a formal observation examination was crucial a 'rule' for them, with little regard for the patient's own thoughts and preferences. This implies practitioner-centeredness, whereby their need to obtain knowledge is of highest importance and the patient involvement is low. In contrast, the third participant appears to be more flexible in their examination, with a greater consideration of the patient's experience and feelings, suggesting a consensual approach which doesn't seek to impose or dominate the patient. This suggests that they considered the patient as participating 'in' rather than being subject 'to' a clinical examination.

Other participants also placed less emphasis on a structured examination focused primarily on the patient’s body (participants 6, 9 and 10). These participants considered that body-focused procedures had limited clinical value for them, for example:

The physical examination is something that I would be expected to do and should do... but I think the value of the actual information is not as important as people think it is... it is not critically important for me; I know how inaccurate that the physical examination can be. (P10, 1)

They tended to take a critical stance towards examination procedures which over-emphasised the patient’s physical dysfunction, and they did not consider such technical procedures as a crucial part of their examination approach.

In summary, during clinical examination and assessment, participants’ focus of interaction with patients, and the cues generated and interpreted from this interaction varied between participants. This resulted in three different foci of interaction; these were *body-focused*, *person-focused* and *patient-focused* interaction. These are summarised in Table 7.7 below, and are discussed with illustrative comments provided.

Interacting with patients and interpreting cues		
Body-focused	Person-focused	Patient-focused

Table 7.7 Summary of study participants’ focus of interaction

Body-focused interaction enabled participants to skilfully obtain significant knowledge and understanding of the patient’s physical problem. For six participants (participants 1, 2, 5, 8, 11 and 12), focusing on patients’ bodies and tissues was firmly embedded in their examination and assessment, for example:

I use my palpation to assess and let the body tell me what it wants me to do to it, and what it will permit me to do to it. (P1, 1)

Body-focused interaction meant that participants' clinical gaze was firmly fixed upon the biomechanical and physical characteristics of the patient's body. Moving, touching and observing the patient's body was central to them acquiring clinical cues. They showed less flexibility in adapting their examination approach in response to the patient feelings, beliefs or preferences.

Person-focused interaction involved participants talking and listening, to construct knowledge of the patient as a person. These participants (participants 3, 4 and 7) focused their interaction on the patient's personal experiences of their problem, such as their pain and dysfunction, for example:

I like to spend time just talking to the person about what's going on and how it's impacting them (P7, 1)

Person-focused interaction helped participants to establish and maintain rapport and trust with patients and to develop an understanding of their stories and illness experience. These participants were more flexible, creative and could adapt their examination to the personal circumstances of the patient.

Patient-focused interaction involved participants (participants 6, 9 and 10) focusing their interaction on developing knowledge of patients' functional problems and day-to-day functional limitations, for example:

We have spent a lot of time in the past just sitting down and explaining and making sure that he understands his condition, and understands what is going on and what he can do to improve it and what he can't do to improve it. (P10, 1)

Participants that focused their interaction on the patient used talking and listening to learn from the patient, enabling them to find out about what they could and could not do in terms of their function, and also what patients wanted or did not want in terms of treatment and management. This facilitated participants to help patients to structure meaningful, functional patient-specific goals.

7.4.3 Treating and managing patients

All participants used manual therapy to some extent in their treatment and management interventions, though there was variation in the importance that hands-on skills and treatment played in their overall practice approach. About half of the participants relied heavily on manual hands-on treatment (participants 1, 2, 5, 8, 11 and 12). While, some participants incorporated other forms of therapeutic modalities such as specific exercise and rehabilitative programmes (participants 9 and 10), or psychologically orientated interventions (participants 3 and 6). This variation in treatment approaches is illustrated by the three comments below:

I use only my hands; I don't use any accessory tools. I'm hands-on lead, my direction is based on what I palpate, and therefore then I respond to that. (P1, 1)

My own personal interest is the psychosocial aspect... I tend to try to bring people on board try to diffuse any form of fear-related behaviours and beliefs about their problem. (P6, 1)

My rehabilitation approach involves anything from my elderly patients walking up and down the corridors, [or] walking backwards to try to help them to open up their hip joints. (P9)

The first participant implies a strong application of hands-on treatment techniques which are applied in response to cues obtained as a result of their technical expertise and skills in manual palpation. This was contrast to the second and third participants who expressed that they incorporated other treatment strategies into their practice. The second participant incorporates psychological approaches into their practice, while the third participant looks to work creatively with patients to help improve their function in daily activities.

Some participants (participants 1, 2, 5, 8 11 and 12), had obvious preferences for particular treatment and management interventions and were reluctant to consider taking other approaches, while others (participants 3, 6, 7, 9 and 10) appeared to be more flexible and could adapt their treatment approach depending on the nature of the problem and the individuality of the patient and their situation. This variation in flexibility is illustrated by the following two comments:

My approach is strictly hands-on, as my nature is more towards a purist idea of osteopathy...and while there are other practitioners that are happy to have their treatment directed by the patient...I go through my process. (P1, 1)

I would be guided by them [the patient] as to what they want, and I'll often say to patients 'what I can offer you is ... and I'll sort of pull out the menu... 'we can do some soft tissue work, we can do some [joint] mobilisations, we can do some spinal manipulation, we can do a bit of acupuncture and we can do some relaxation exercises.'(P6, 1)

The first participant shows a strong reliance on technical hands-on skills whilst uncritically adhering to osteopathic practice traditions and knowledge. This suggests an approach to practice which is rigid, inflexible and practitioner-centred. In contrast, the second participant sought the patient's views and input into treatment decisions, and appeared to be much more cooperative and flexible with regard to moulding to the patient's preferences and perspectives.

Participants appeared to have different therapeutic goals in the treatment and management of their patient. Several participants (participants 1, 2, 5, 8, 11 and 12) looked to take charge of the patient's problem, and they considered that they were responsible for fixing and treating the patient's pain and dysfunction. They focused on using their knowledge and skills to improve their patient's health, as illustrated by the comments below:

And I'm thinking what can I do to improve health in that area of his spine? (P12)

I wanted to increase motion into that part [of the spine]; [so] I decided at this stage it is worth giving him a little bit of a [spinal] mobilisation their too. (P11)

Several participants (participants 1, 5, 8, 11 and 12) assumed responsibility for treatment and management decisions, encouraging the patient to be passive, so that they could direct their treatment to the patient's body. Their goal was to improve patients' health through improving function of tissues and joints, using specific treatment techniques, as illustrated by the following comments:

I see that the time of treatment is a time for the patient to relax...and that it's better for the patient to relax and breathe, and have the treatment, rather than filling them with a conversation that isn't necessary. (P1, 1)

The patient's role is to try and relax as much as possible...and follow instructions. So during treatment I would hold them and I would instruct them then to move their arm in a particular way. (P8, 1)

I am trying to get a little bit of mobility for him. To increase that range for him, so that does not hold on to the joint so that he actually lets go of it. (P11)

The three comments suggest an approach to patient treatment and management which tended to promote a passive role of the patient. In particular, the first two participants actively encourage and require the patient to be passive and “relax”. They seem to endorse the notion of giving treatment to the patient-as-recipient, implying a paternalistic approach to care. They considered that they possessed the knowledge and skills to achieve their goal and improve the patient’s health with minimal active involvement of the patient. These participants were less likely to consider different treatment approaches especially in response to patients expressing a preference for a particular treatment, this is summarised by the following extreme comment:

I don't need patients to dictate how I should do what I do. I didn't spend all this time training [in osteopathy] for a patient, who doesn't understand osteopathy, to tell me how they want me to treat and manipulate their joints. (P1, 2)

This participant suggests little patient involvement in the decision-making surrounding treatment and management, with the participant in the driving seat and leading the way. Participants that tended to be inflexible in their treatment and management approach (participants 1, 5, 8 and 12) had high levels of self-belief and took a less critical stance towards practice, which may have resulted in over confidence in their practice and their ability to decide how best to treat the patient.

Some participants shifted the clinical decision-making responsibility towards the patient, and actively encouraged them to be involved in making treatment and management decisions, and one participant commented:

When patients come in and they say they'd like a certain treatment and it's worked before, I would be more inclined to follow that treatment approach- because you know it works and they've asked for it. (P10, 2)

Three participants (participants 6, 9 and 10), emphasised that the patient should be encouraged to take the lead in decision-making, and it appeared that they endeavoured to give whatever treatment and management, the patient requested (for example hands-on treatment or self-management strategies), as illustrated by the comment above. They felt that through helping to educate patients about their condition and the possible treatment options, they could make informed decisions about their own care, implying a patient-led approach to clinical decision-making. This is illustrated by the following comment from participant 6:

...I explain to patients what their problem is – “I don't think it's this, I think it could be this, but I could be wrong so we need to check this out and this is the way we could proceed... What would you like to do?” So it's all done with the patient's decision, really. (P6, 1)

In contrast three participants (participants 3, 4 and 7), were motivated to share the responsibility and knowledge with their patients, so that treatment and management options were mutually negotiated. The comments below demonstrate participants sharing knowledge through collaboration:

We have tried many different approaches, and we have seen through MRI scans a certain amount of dysfunction, and prolapsed discs and nerve impingements, and loss of disc height and all the rest of it. So we know what is going on and we have talked things through together. (P10, 1)

I'll spend a lot of time discussing and explaining what the options are with the patient so I'll say, you know “this is what I can do to treat this with osteopathy and this is what you can do”. (P7, 2)

In both comments, the use of the words ‘we’, ‘with’ and ‘together’ suggests a relationship emphasising equality, with neither the participant nor patient adopting an explicitly authoritative or dominant role. The second participant advocates an approach in which patient involvement was varied and dynamic. They appeared to employ

treatment and management strategies which incorporated both high and low levels of patient involvement respectively.

For three participants (participants 6, 9 and 10), their treatment and management of patients aimed to encourage the patient to self-manage their pain and dysfunction, and they looked to facilitate a sense of empowerment through active participation, as illustrated by the two comments below:

I always try and empower my patients, to feel in control and I've always had a strong rehab ethic. (P9)

I want my patients to be autonomous...and they can contact me if they need to but they don't need to come in for treatments on an ongoing basis, so there is a clear end point, which is very, very important. (P6, 1)

These participants embraced patient autonomy, and they perceived that their role was to help patients assume responsibility for their health and dysfunction. This resulted in participants actively encouraging patients to take the lead in clinical decision-making, and this included providing choice with regard to their treatment and management options, as illustrated by the following two comments:

I have explained what I feel I could do to help. And given him those options and it has allowed him to make a choice as to what he wants to do. (P10, 1)

I give patients a variety of options...and the whole thing is done with "Okay, this is what I can do, do you have any preference, what would you like, what do you think would help you most of all?" (P6, 1)

These participants (participants 6, 9 and 10) appreciated the patient as an important source of knowledge, where the patient's personal values and preferences helped to inform treatment and management decisions. They viewed the patient as trustworthy, where power and responsibility is shifted to the side of the patient. Using the analogy of a car, the following comment summarises how participants took a back seat whilst encouraging patients to sit in the driving seat and make their own decisions:

By giving patients choice it treats them as an adult and gives them the autonomy to say “look actually I don't agree with this and I don't want to do this; it doesn't fit in with my values, attitudes and beliefs and I want to change it”...so they are in control. (P6, 1)

In comparison, six participants (participants 1, 2, 5, 8, 11 and 12) considered that they were mainly responsible for treatment and management decisions, and they would make decisions for the patient. They perceived that they possessed the knowledge, experience and skills to lead the clinical decision-making. This is illustrated by the following two comments:

I will determine what [treatment] techniques I think the patient needs. (P2)

I think it's about my fingers giving me the information that I need, telling me about those tissues, about the quality of them, what are they doing?, are they doing what they're supposed to be doing? Are they not doing what they're supposed to be doing? What do they feel like? (P8, 1)

For these participants, clinical decision-making did not involve a mutual exchanging of information and ideas with patients, and treatment decisions were based on their osteopathic skills, knowledge and expertise. They appeared to adopt a dominant and ‘all knowing’ stance towards their patient, resulting in an inequality of responsibility and knowledge, suggestive of a paternalistic approach to patient care. In taking such an authoritative position, these participants appeared less likely to explore and value the patient’s knowledge such as their illness experience, their motivations, or preferences with regard to treatment and management.

In summary, there was variation in the level of patient involvement during participants’ treatment and management approaches. The level of patient involvement was related to participants’ approaches to clinical decision-making and therapeutic goals. The three different approaches to clinical decision-making were; *practitioner-led* (low level of patient involvement), *shared* (equal level of patient involvement) and *patient-led* (high level of patient involvement). These are summarised in Figure 7.1 overleaf, and discussed with illustrative comments provided.

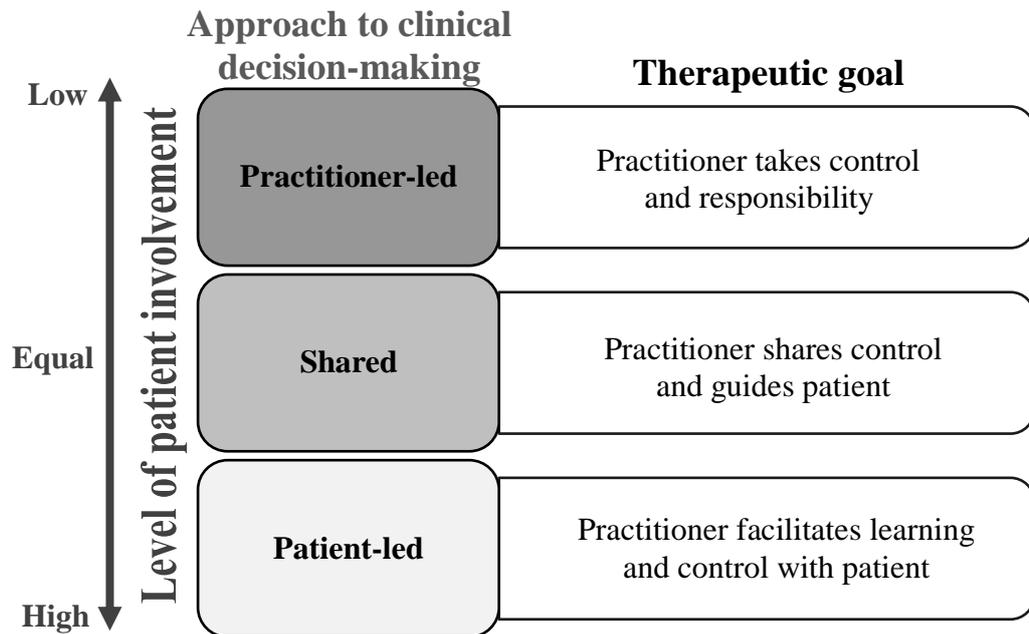


Figure 7.1 Relationship between level of patient involvement, approach to clinical decision-making and therapeutic goal

Participants that took a *practitioner-led* approach to clinical decision-making emphasised a *low level of patient involvement*. These participants (participants 1, 2, 5, 8, 11 and 12) took the lead in clinical decision-making and they did not encourage active patient involvement and input. The comment from participant 1 below illustrates the relationship between practitioner-led clinical decision-making, a low level of patient involvement and a therapeutic goal orientated towards participants *taking control and responsibility*:

If the body is not moving as freely as they should do, then health is not going to be promoted, so the key to me is that I ensure that the body is able to express itself. (P1, 1)

Participants that adopted *practitioner-led clinical decision-making* were centred on their treatment techniques, skills and technical expertise, and were focused on taking charge of the patient and their problem.

Participants that encouraged *shared clinical decision-making* with their patients (participants 3, 4 and 7), promoted collaboration and an *equal level of patient involvement*, for example:

If a patient feels it's more efficacious to run on a beach barefoot in the sand rather than I manipulate their spine, then I'll recommend that, and that's treatment as far as I'm concerned.
(P3)

For these participants, clinical decisions were mutually negotiated, and treatment and management was aimed at *guiding the patient* towards their personal health goals. This meant at times, participants would lead clinical decision-making, but at other times they encouraged the patient to adopt a more active approach.

Other participants adopted *patient-led* approaches to clinical decision-making and facilitated *high levels of patient involvement* (participants 6, 9 and 10). These participants encouraged the patient to take a lead in clinical decision-making. They promoted educating patients so that they could make informed decisions themselves, for example:

...so the whole process is "Okay, this is what I can do, do you have any preference, what would you like, what do you think would help you most of all?" "Now that you've chosen, these are the side-effects. Are they acceptable? If so, let's have a go". (P6, 1)

Participants that encouraged *patient-led clinical decision making* emphasised the importance of the patient to control the possible directions that treatment and management could take.

7.5 Therapeutic approaches

Participants' professional views and their general clinical practices and procedures, presented in the previous sections (Sections 7.3 and 7.4), contributed to the development of three theoretical models of therapeutic approaches, which characterised study participants and their clinical practice. These three therapeutic approaches are presented below with a quotation to illustrate the essence of the approach. This is not to suggest that all participants fitted distinctly in each model, rather it offers a broad differentiation of participants' therapeutic approach to allow for theoretical comparison. Table 7.8 overleaf shows the distribution of participants amongst the three approaches.

	Treater	Educator	Communicator
Participants	1, 2, 5, 8, 11, 12	6, 9 and 10	3, 4 and 7

Table 7.8 Participants' therapeutic approaches

7.5.1 The Treater

My primary aim is to treat, rather than 'let's sit down and discuss your problem and see what we can do about it'. (P1, 2)

Treaters had a view of osteopathy which was practitioner-centred, and they relied upon their application of specialised osteopathic skills and knowledge to treat and manage patients. They tended to be less flexible in their approach to patients, and felt that the application of traditional osteopathic theories and concepts was central to their practice, and considered that this was important to distinguish them from other healthcare professionals. They focused on patients' physical and biological dysfunction and how they could correct these through skilful hands-on treatment. Treaters analysed patients' bodies and tissues, and in combination with their osteopathic knowledge they diagnosed and made treatment and management decisions based on the logical connections between anatomy, physiology and biomechanics. In this sense, Treaters conceived practice as technical rationality, and their epistemology of practice knowledge leant

towards positivism, resulting in an emphasis on the technical and scientific facts of the patient and their problem.

Their hands were the most important tools that they employed in practice, and they used their technical skills to palpate and move the patient's body to develop knowledge of their problems. Treater did not emphasise communicating with the patient using words and language. They considered that patients' bodies contained knowable facts and that the body had its own history. Treater emphasised their technical expertise in obtaining body-focused knowledge through skilful osteopathic techniques and procedures.

They considered themselves as instrumental decision-makers, and were confident in their ability to make independent decisions based on their knowledge. Their confidence in a body-focused approach meant they tended not to actively seek the patient's input into treatment and management decisions. In this regard, the Treater approach was characterised by a low level of patient involvement and they took the lead in clinical decision-making. Their role leaned towards being paternalistic, authoritative and knowledgeable, and they sought to direct and decide for the patient, in accordance with what they had discovered during their body-focused examination (such as, the body's structure and movement characteristics). Encouraging patient passivity was necessary for them to deliver their skilful hands-on treatment which the patient's body required and they took control and responsibility for restoring the patient's health.

A summary of the Treater approach is illustrated in Table 7.9 below.

The Treater (Participants 1, 2, 5, 8, 11, 12)	
<i>Characteristics</i>	
View of osteopathy	Practitioner-centred
Interaction	Body-focused
Patient involvement	Low level
Approach to decision-making	Practitioner-led
Therapeutic goal	Practitioner takes control and responsibility

Table 7.9 Summary of the Treater approach

7.5.2 The Communicator

I think you can help get a lot of people better by having a good chat and a cup of tea! (P4)

For Communicators, collaboration and partnership formed the foundations of their view of osteopathic practice. They respected the patient as an equal, viewing them as individuals. Communicators focused on language and dialogue to encourage patients to verbalise their feelings and experiences about their pain and dysfunction. This required them to place significant value on developing and nurturing an equal relationship with their patients. They were critical of well-defined osteopathic theories and considered that adhering to the traditional concepts and principles of osteopathy limited their capabilities and their practice. Through talking and listening, Communicators exchanged views and perspectives enabling them to actively co-construct knowledge with their patients. Their constructionist epistemology of practice knowledge meant that they actively developed a view of the clinical situation through meaningful social interaction.

Communicators saw patients as individual people, and they were committed to getting to know the person behind the patient and their body, such as the social and emotional impact of their problem. For them, understanding the person from this perspective was important to build and maintain an effective relationship and to understand patients' personal meanings and experiences of their dysfunction. They conceived practice as professional artistry, and relied upon their interpersonal skills to interact and engage patients and help guide their clinical reasoning and professional judgements. In addition to their hands-on skills, Communicators intentionally used their personal attributes as tools, and emphasised the therapeutic use of self in their practice.

Communicators shared the responsibility of clinical decision-making with their patients, resulting in treatment and management decision being mutually negotiated between themselves and the patient. Their high levels of emotional self-awareness and their ability to relate to people meant they were flexible in their decision-making and could respond to the individual patient's capabilities. While Communicators embraced patient autonomy and collaboration, there was movement within the degree of autonomy which

patients exercised at any particular time during treatment. At times they would actively take responsibility when performing certain clinical procedures, and at other times, they would encourage patients to take a more active role and assume more responsibility.

The Communicator therapeutic approach is summarised in Table 7.10.

The Communicator (Participants 3, 4 and 7)	
<i>Characteristics</i>	
View of osteopathy	Collaboration
Interaction	Person-focused
Patient involvement	Equal level
Approach to decision-making	Shared
Therapeutic goal	Practitioner shares control and guides patient

Table 7.10 Summary of the Communicator approach

7.5.3 The Educator

I see the patient as an individual who owns their own body and can make decisions about it. (P9)

Educators worked with patients to develop the skills to self-manage their health issue, looking to facilitate empowerment, which for them was the central aspect of osteopathic practice. They focused on teaching and motivating patients to enable them to manage their own pain and dysfunction. The patient sets their own health goals and objectives and the Educator helped them to reach them. In addition to their hands-on skills, Educators emphasised listening and learning from their patients, and they were focused on building an understanding of the patient’s problem and how it impacted their function in day-to-day life so that patient-specific treatment plans could be developed with the patient.

Through talking and listening, Educators constructed knowledge of how patients perceived their own pain and dysfunction, and worked with patients to self-reflect on their problem. In this regard they held a constructionist epistemology of practice knowledge. Educators saw their role to encourage, teach, and exchange knowledge so that the patient could make informed decisions about treatment and management. They considered patients as autonomous individuals and a high level of patient involvement characterised their approach, and they sought to place the decision-making in the hands of the patient. There was little change in the degree of patient autonomy, for them it was necessary for the patient to have a high level of control and responsibility from the outset and throughout treatment and management. They considered that by encouraging patients to take the lead in decision-making, it would aid empowerment. By learning from their patients and their practice they developed their own personal theories of practice and treatment approaches, which were facilitated by their professional artistry conception of practice. This resulted in them being flexible and creative in their practice in order to respond to the patient’s individual needs and preferences. For example, interventions could take the form of hands-on manual therapy, teaching or psychological approaches aimed at removing the patients fear and to help adjust their behaviour.

The Educator approach is summarised in Table 7.11 below.

The Educator (Participants 6, 9, 10)	
<i>Characteristics</i>	
View of osteopathy	Empowerment
Interaction	Patient-focused
Patient involvement	High level
Approach to decision-making	Patient-led
Therapeutic goal	Practitioner facilitates learning and control with patient

Table 7.11 Summary of the Educator approach

7.6 Theoretical comparison of therapeutic approaches

Half of participants could be considered as Treater (participants 1, 2, 5, 8, 11 and 12), with the remaining participants divided equally between Educator (participants 6, 9 and 10) and Communicator (participants 3, 4 and 7) approaches. While the three therapeutic approaches have been presented as distinct, they may be considered along a continuum. The Treater model is substantially different from Communicator and Educator models, in that it is based on a conception of practice which can be considered as technical rationality (Schön 1987; Fish and Coles 1998). However, the Communicator and Educator models share a conception of practice which is analogous to professional artistry (Fish and Coles 1998). Table 7.12 compares the three constructed models. The next section further explores ‘conception of practice’ as the core category, and its relationship to the three therapeutic models constructed from the data.

Characteristic	Therapeutic approach		
	Treater	Communicator	Educator
Conception of practice	Technical rationality	Professional artistry	Professional artistry
View of osteopathy	Practitioner-centred	Collaborative	Empowerment
Focus of interaction	Body	Person	Patient
Approach to clinical decision-making	Practitioner-led	Shared	Patient-led
Patient involvement	Low	Equal	High
Therapeutic goal	Practitioner takes control and responsibility	Practitioner shares control and guides patient	Practitioner facilitates learning and control with patient

Table 7.12 Comparison of the constructed therapeutic approaches

7.6.1 Conception of practice

Participants' therapeutic approaches flowed from how they conceived their practice. Conception of practice was considered to be how participants viewed the nature of their practice and this is closely associated with their views on the nature of knowledge associated with their practice; this has been explicated by various authors (Schön 1987; Fish 1998; Fish and Coles 1998) in relation to technical rationality and professional artistry, but may also include tasks, skills, activities and decision-making. This provided the most powerful framework by which to view the different models of therapeutic approaches (Fish and Coles 1998). Participants whose therapeutic approach could be characterised as a Treater tended to conceive practice as a relatively simple application of specific technical skills and osteopathic theories, to address patients' problems. This view was akin to a technical rational conception of practice. Treaters tended to see problems through a lens which when focused, viewed the patient's problems a relatively simple biomechanical, anatomical and physiological deviations from normal, which could be known by technical examination procedures. Their focus on obtaining propositional knowledge of patients' bodies meant they tended not to appreciate the complex psychological and social aspects of the patient. They considered that their technical hands-on skills were central to their practice and was the essence of their expertise. Owing to their technical rational view of practice, Treaters looked to analyse cause-effect relationships behind patients' problems, and this was instrumental in their clinical decision-making. They considered that they possessed the skills and knowledge to 'fix' patients and decide on treatment approaches, resulting in them leading the clinical decision-making. During practice they reflected on the specifics of their skills such as the particular movement of a joint or tissues and were less critical of the knowledge being obtained. They were less aware of the broader picture of practice, such as the patient's experiences and social circumstances, which were less likely to inform their practice.

Participants who were characterised as either a Communicator or Educator recognised the ambiguity and complexity of practice, and their view of practice was akin to professional artistry (Fish and Coles 1998). As a result, they emphasised creativity and flexibility to construct an understanding of the individual patient and their problem. Participants with a professional artistic conception of practice appreciated different sources and forms of knowledge, which could be blended together to guide clinical

action. In contrast to obtaining biomechanical and anatomical knowledge from the patient's body in a detached manner, they emphasised actively involving the patient to construct knowledge of the clinical situation and together make treatment and management decisions.

While Communicators and Educators shared a conception of practice which was considered to be professional artistry, there were some differences. A strong feature of Communicators was their therapeutic use of self, which enabled them to relate to the person and develop a relational understanding of them and their problem. They possessed especially well developed social and emotional skills which they could use with their personal knowledge to reassure the patient and guide them towards their therapeutic goals. This knowledge meant they balanced responsibility in clinical decision-making and at times they would take the lead while at other times, they would encourage the patient to take responsibility. In contrast, Educators were concerned with patients' functional impairments and how they affected their lives, and worked creatively with patients to help facilitate learning and self-management. This meant identifying patients' learning styles and potential barriers to learning, whilst encouraging them to actively participate in treatment and management. They would listen and learn from their patients and their creativity was expressed as flexibly adapting their educational approaches to patients' preferred learning abilities and expectations.

In reality, participants' conception of practice lay on a continuum, with technical rationality at one end, and professional artistry at the other. Such a continuum meant that therapeutic approaches were not totally distinct, and also represented a continuum, meaning that some Treaters may be closer to a Communicator approach, and some Communicators may be closer to an Educator approach. Figure 7.2 overleaf, illustrates the continuum of conceptions of practice and its relationship with participants' therapeutic approaches, level of patient involvement and approach to clinical decision-making.

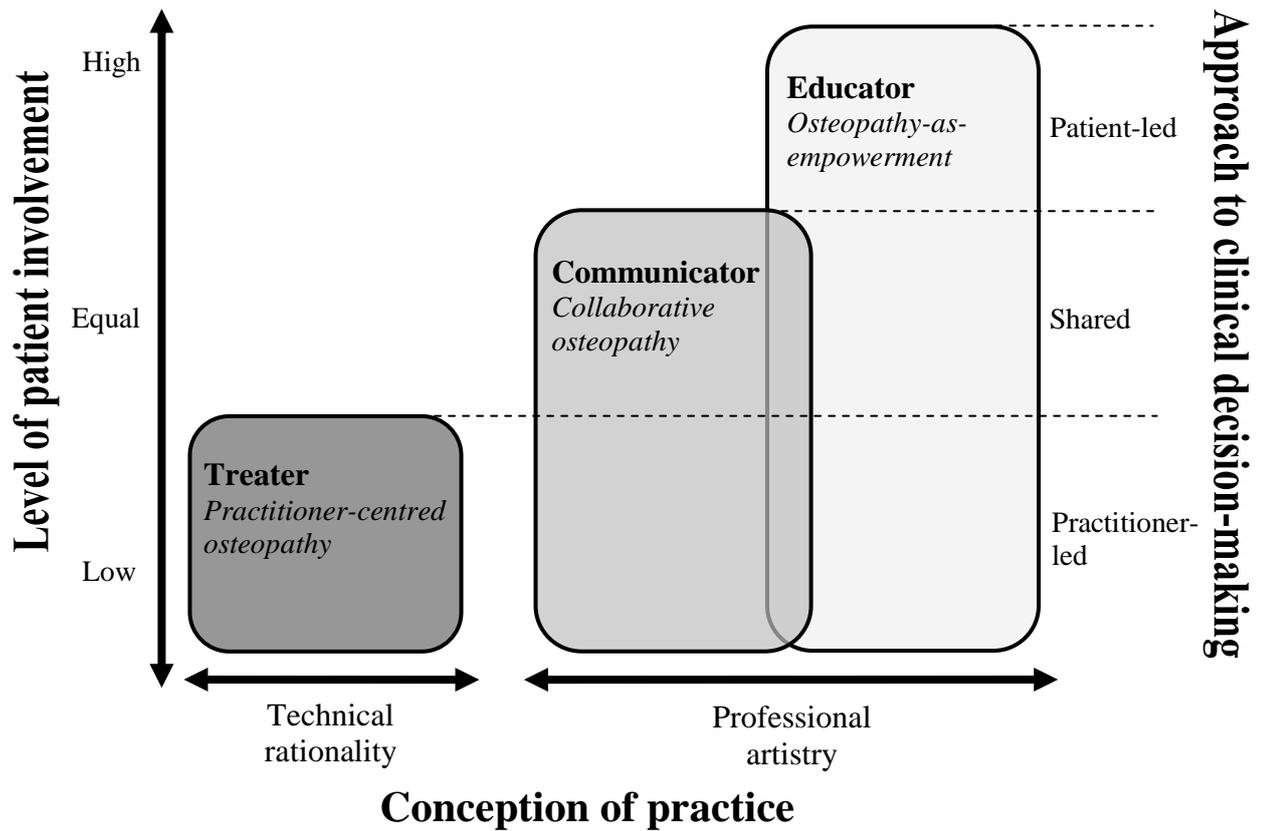


Figure 7.2 Therapeutic approaches and the conception of practice continuum

7.7 Influencing factors

A number of factors were identified which influenced participants' conception of practice. These are summarised in Figure 7.3 and they are presented overleaf. The first two factors have been discussed earlier ('educational experience' in Section 7.2, and 'view of health and disease' in Section 7.3), but will be further presented here to illustrate their influence on participants' conception of practice.

Influencing factors		
Didactic, less-critical	Educational experience	Student-centred, critical
Biomedical view	View of health and disease	Biopsychosocial view
Positivist	Epistemology of practice knowledge	Constructionist
Theories applied to practice	Theory-practice relationship	Theories developed from practice
Paternalism	Practitioners' perceived therapeutic role	Patient autonomy

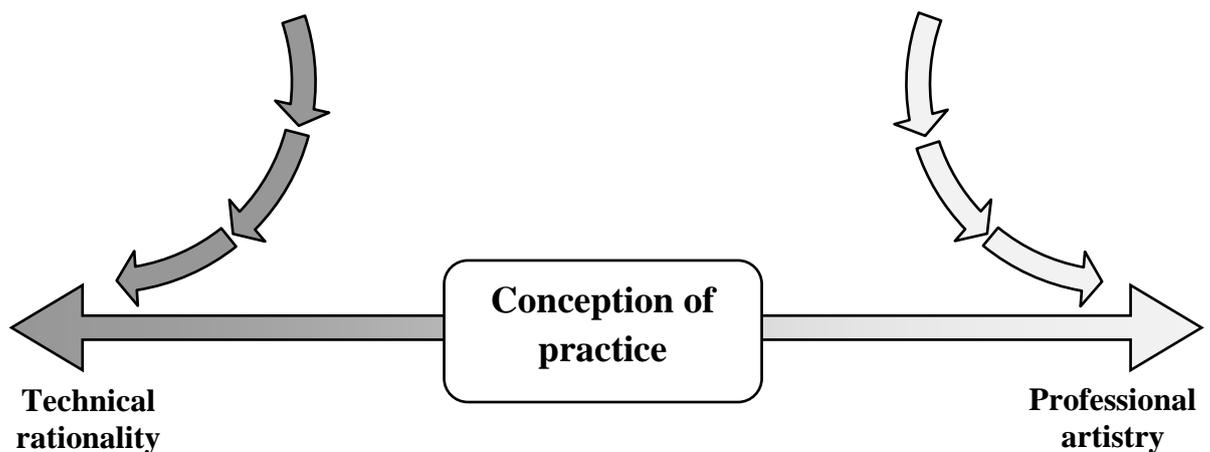


Figure 7.3 Factors influencing participants' conception of practice

7.7.1 Educational experience

Educational experiences contributed towards shaping participants' conception of practice. Of the six participants who could be characterised as either Educators or Communicators, four of them (two Communicators and two Educators) possessed formal postgraduate Master's degrees (participants 3, 6, 7 and 10). In contrast, no participant characterised as a Treater possessed a formal postgraduate degree qualification. Postgraduate education which promoted student-centredness and critical thinking may have encouraged greater reflection and critical evaluation of practice knowledge, in particular the traditions and theories associated with osteopathy, and the over reliance on biomechanical and anatomical knowledge, for example:

I don't see black as white, I see some studies suggest this but we could look at it this way, I try to draw on my experience and knowledge of physiology, medicine and things like that, to try and give a balanced opinion...but I'll happily question the dogma of my own profession. (P3)

Participants who possessed formal postgraduate education tended to take a more critically evaluative stance towards practice. They were more comfortable with the uncertainties of osteopathic practice, and tended not to rely upon technical skills or knowledge to solve problems, as illustrate by the following comment from an Educator:

I may say to patients "I actually don't know what's going on here; it could be discogenic, it could be posterior elemental, you may have some degeneration or some sort of congenital problem... I try to be as honest and transparent as possible; if I don't know I'll actually say "I don't know what's going on". (P6, 1)

They went beyond the application and acquisition of propositional knowledge and they were more likely to incorporate other forms of knowledge such as personal and emotional knowledge. Their postgraduate learning may have moved their conception of practice along the continuum towards professional artistry. In contrast, participants without postgraduate qualifications may have been moulded from the didactic nature of undergraduate training, where the focus is on knowledge acquisition rather than critical evaluation. This may have resulted in participants adopting a more rigid and rule-based approach to practice, applying theories more strictly to practice situations, as illustrated by the following Treater:

I came from the time where the tutor was always right. So you had to be very careful as to what you said to the tutor and how you presented your information... [and] because I felt that the tutor was right that I then never challenged them. (P1, 2)

7.7.2 View of health and disease

Participants who emphasised the biomedical aspects of health and disease tended to focus their clinical practice on 'finding and fixing' patients' problem through the application of technical skills and knowledge, as illustrated by the comment from a Treater overleaf:

Everyone's always got something biomechanical and I think it's not all psychosocial, they all have got some mechanical factors that are contributing to their problem, even if it's the initial insult to the tissues, that have then led to them having chronic pain symptoms, you need to address that as well (P2)

Having a narrow and uncomplicated view of health and disease would result in participants oversimplifying patients' problems, and therefore employ relatively straightforward methods to resolve the issue such as the application of practice traditions, rules and techniques.

In contrast, participants that took a biopsychosocial view of health and disease emphasised the psychological and social aspects of patients' problem, and were more likely to appreciate the complex interaction of these different factors in relation to their practice and their patients. They felt a requirement for a deeper and contextual exploration of the individual patient's illness experience rather than just focusing on the biological, biomechanical and biomedical aspects of the dysfunction. In viewing pain and dysfunction as part of patients' experience, these participants would recognise the complexities of practice and necessitate a professional artistic approach, and one Educator commented:

Everyone is different. Everyone is presenting with different bodies and injuries and lifestyles and so many factors are different. People have different personalities, psychologies, previous histories and emotional tendencies and likes and dislike. (P10, 2)

7.7.3 Epistemology of practice knowledge

How participants viewed practice knowledge and the ways in which they generated knowledge with their patients was related to their conception of practice. Treater's strived for accuracy and specificity in their technical skills to assess and treat a tangible dysfunction within a patient's body. Propositional knowledge such as anatomy, pathology and biomechanics was central to their knowledge base, and they sought to obtain objective facts of the patient through hands-on techniques. They were less concerned with exploring and understanding the personal meaning and experiences of patients. A positivist view of practice knowledge was associated with a technical rationality conception of practice and a Treater therapeutic approach.

Participants with views of practice knowledge akin to constructionism embraced patients' knowledge, experiences and perceptions of their own dysfunctions and realities. These participants recognised the importance of listening and using language in order to construct an understanding of how patients' made sense of their problem and their lived-experience of their pain and dysfunction. In addition to propositional knowledge developed from physical examination, these participants incorporated information from patients' narratives which they constructed during social interaction. A constructionist view of practice knowledge was associated with a professional artistic conception of practice and Communicator and Educator therapeutic approaches.

7.7.4 Theory-practice relationship

Participants who were Treaters appeared to view theory as separate from practice. For these participants, existing theories, such as biomechanical and osteopathic theories (for example, the concept of somatic dysfunction- Section 3.2.3) were of central significance and formed the basis for practice. These theories were applied less flexibly to inform clinical actions such as examination and treatment procedures.

In contrast, participants who held professional artistic views of practice appeared to develop their theories from practice. Though learning from, and reflecting on, practice they would develop their own theories and practice models. They tended to have personalised ideas, styles and theories of their own which they had developed from practice.

7.7.5 Practitioners' perceived therapeutic role

Practitioners' perceived therapeutic roles ranged from paternalism to patient-autonomy. Those participants who adopted a more paternalistic role with their patients assumed a dominant position in the relationship with their patients. Participants who adopted a paternalistic role seemed to base treatment and management decisions on the type of physical dysfunction they perceived to be present, and they tended to be Treaters, as illustrated by the following comment:

If somebody comes in with a simple facet lock you know, which started three days ago, you can usually manipulate it straight away. (P12)

A paternalistic role resulted in participants assuming responsibility for the decision-making, whereby problems are solved by their application of simple rules and technical and propositional knowledge. Treater's tended to assume a paternalistic role with acting in the best interests of their 'sick' patients. They did not encourage active patient involvement and decisions were made on the basis of their acquisition of knowledge through interaction with patients' bodies. This perceived role was associated with a technical and rational conception of practice.

In contrast, other participants perceived their therapeutic role as enhancing patient autonomy. They explored patients' values, beliefs and preferences, and recognised the complexity of the individual patients' experience and uniqueness of their situation. This required high levels of interpersonal skills, and was associated with a professional artistic conception of practice. Participants who adopted therapeutic roles which emphasised patient autonomy tended to be characterised as Educators and Communicators.

The full theory of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study is illustrated fully in Figure 7.4 overleaf.

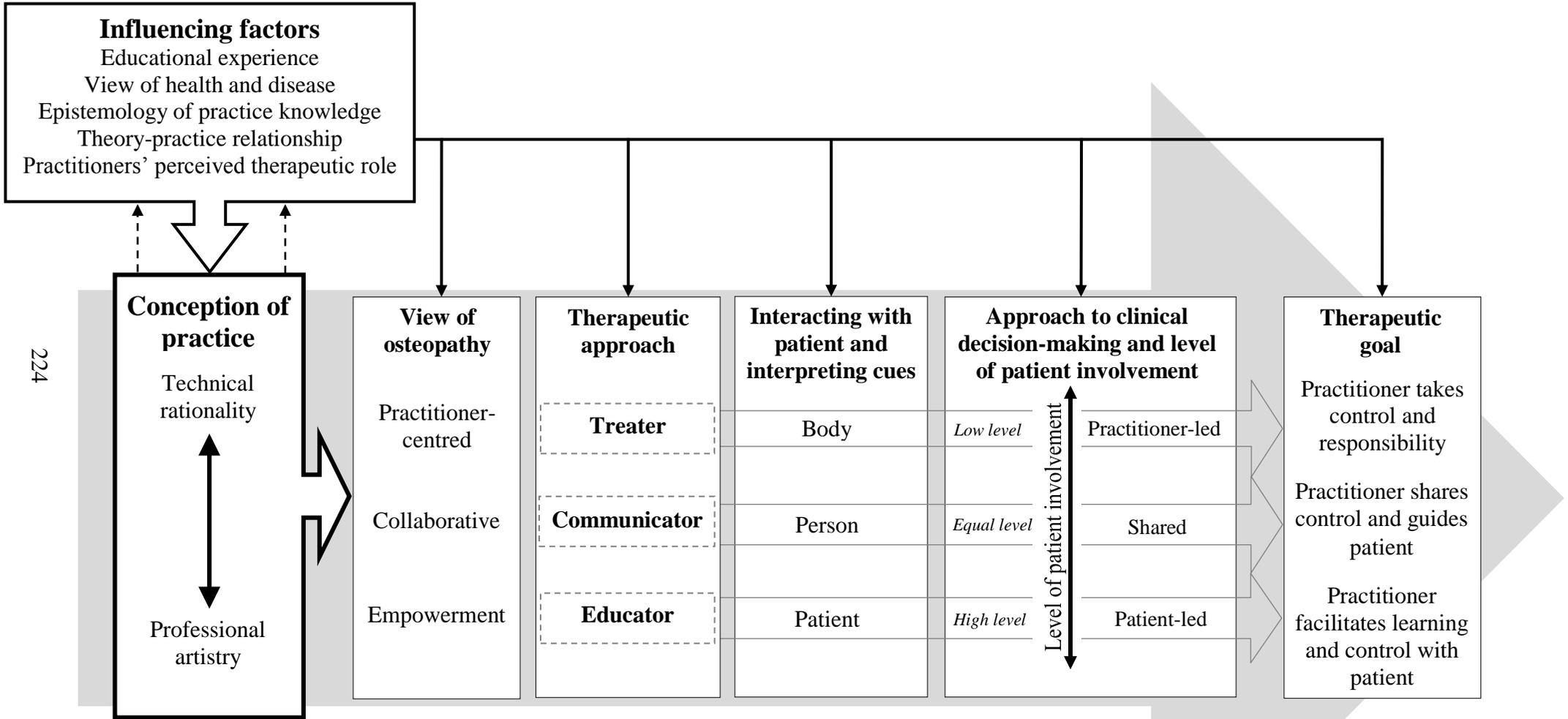


Figure 7.4 Theory of the clinical decision-making and therapeutic approaches of study participants

7.8 Chapter conclusion

The findings have led to the development of a substantive theory of the clinical decision-making and therapeutic approaches of the experienced osteopathic participants in this study. The chapter has presented participants' background, their professional views and their general clinical practices and procedures, which together, contributed to the development of three theoretical models of therapeutic approaches. Different therapeutic approaches resulted in variation of; foci of interaction, approaches to clinical decision-making, different levels of patient involvement, and different therapeutic goals. Participants' therapeutic approaches were determined by their conception of practice, which lay on a continuum of technical rationality and professional artistry, and formed the core category. The final section of this chapter presented the individual factors which influenced study participants' conception of practice. The next chapter discusses and evaluates the findings in the relation to the existing literature and discusses the implications of the substantive theory to osteopathic practice, education and research.

Chapter 8: Discussion

8.1 Introduction

This chapter discusses the findings of this study in the context of the existing literature. It begins by re-visiting the research questions, outlining how the findings have addressed them. It then presents six key summary points which are considered to be theoretical insights of the clinical decision-making and therapeutic approaches of the sample of experienced osteopaths, developed as a consequence of the constructed theory. The study and the constructed theory are examined and critiqued, so that the reader can judge the quality of the thesis. The chapter continues by considering the authenticity of the research findings, my final reflection on the research journey and the impact I had on the study. Finally, the study's contribution to the knowledge base of osteopathy is discussed and the implications of the findings for practice, education and further research are outlined.

This study aimed to investigate the clinical decision-making and therapeutic approaches of experienced osteopaths in the UK. The substantive theory is illustrated fully in Figure 7.4, in the previous chapter. The findings from this study address the research questions in the following way:

- *What is the nature of clinical decision-making of experienced osteopaths?*

The findings suggest that participants' clinical decision-making was based on the generation and interpretation of specific cues which were developed as a result of practitioner-patient interaction. There was variation in how participants generated cues and the nature of their interaction, which was focused on the body, the person or the patient.

- *What are the therapeutic approaches adopted by experienced osteopaths?*

Study participants' therapeutic approaches lay on a continuum, and participants were broadly characterised as a Treater, Communicator or Educator. The three therapeutic approaches were associated with different approaches to clinical decision-making.

- *Do approaches to clinical decision-making vary amongst practitioners?*
Approaches to clinical decision-making vary amongst participants and are related to one of the three therapeutic approaches. Participants characterised as Treater adopted a practitioner-led approach to clinical decision-making, participants characterised as Communicators adopted a shared approach to clinical decision-making and participants characterised as Educators adopted a patient-led approach to clinical decision-making.
- *What is the nature of any variation in therapeutic approach and clinical decision-making?*
Each therapeutic approach, Treater, Communicator or Educator, incorporates variations in participants' view of osteopathy, approach to clinical decision-making, level of patient involvement, focus of interaction and therapeutic goal.
- *What factors influence practitioners' therapeutic approaches and clinical decision-making?*
At the core of participants' decision-making and therapeutic approach was their conception of practice which lay on a continuum between technical rationality and professional artistry. A number of influencing factors were identified as contributing to participants' conception of practice and therapeutic approach. These were: practitioners' educational experiences, view of health and disease, epistemology of practice knowledge, theory-practice relationship, and their perceived therapeutic role.

8.2 The findings in relation to the literature

This is the first study to explore the clinical decision-making and therapeutic approaches of experienced osteopaths. This section outlines the major findings of the study and sets them in the context of the extant literature.

8.2.1 Summary point 1

Experienced osteopaths' therapeutic approaches were characterised by their view of osteopathy, focus of interaction, approach to clinical decision-making, level of patient involvement and their therapeutic goal.

The findings from this study suggest that participants held differing perceptions of the purpose and practice of osteopathy based on their professional identity, their clinical experiences, their views of health and disease and their education experiences, which together helped to inform and shape their view of osteopathy. The ways in which these perceptions and assumptions of osteopathy were enacted, shaped practitioners' clinical actions, decisions and resulted in different therapeutic approaches to practice (Trede and Higgs 2008). The findings that there is diversity in how practitioners identify with their profession and their conceptions of being a professional is consistent with research investigating graduating physiotherapists professional identities and expectations of professional life (Öhman and Hägg 1998; Richardson et al. 2002; Lindquist et al. 2006). The findings that there was variation in participants' emphasis on aspects of patient management, in particular education/self-management and hands-on treatment, is consistent with research exploring how final year physiotherapy students conceptualise their therapeutic roles in their practice (Lindquist et al. 2006). However, this study found that there was a group of participants (Communicators), who emphasised talking and listening with patients above both facilitating patient education and providing hands-on treatment, and this is in contrast with previous similar research (Lindquist et al. 2006). The finding that there was variation in how participants interacted with patients during examination and treatment is consistent with research investigating the patterns of communication (including physical and verbal communication) of physiotherapists (Thornquist 1991, 1994, 2006). Specifically, the finding that some participants emphasise communication with patients through a constant exchanging of body-focused cues, such as touching, moving and observing the body, is consistent with research exploring the interaction of manual-physical therapists with patients (Thornquist 1991).

In this study, participants were characterised as Treaters, Communicators or Educators according to their therapeutic approach. Treaters viewed the practice of osteopathy as *practitioner-centred*, whereby they considered themselves as the central, authoritative

figure that possessed the knowledge and technical skills to discover and treat the patient's problem. Communicators viewed osteopathy as *collaboration*, whereby practice centred on the therapeutic relationship and the sharing of knowledge and decision-making with the person. Educators considered their practise of osteopathy as facilitating *empowerment*, and they focused on informing patients, eliciting their personal preferences and their needs and providing choice. The finding that practitioners' views and beliefs of their professional and therapeutic role, influences their clinical practice and behaviour, is consistent with research in other manual and physical therapy professions (Thornquist 2006; Evans 2007; Lindquist et al. 2010). During professional education, practitioners begin to develop their own values, beliefs and philosophy of professional practice, which are considered to be some of the most important and influential forms of professional socialisation (Richardson 1999a, 1999b; Richardson et al. 2002). Undergraduate training would have enabled groups of individual practitioners to develop shared perspectives, common values and assumptions (Richardson 1999b). Practitioners may also have refined and developed new perspectives and values based on the day-to-day social interaction in the workplace with other colleagues (Richardson 1999b). Symbolic Interactionism theory (Blumer 1986; Charon 2010) proposes that an individual's behaviour is likely to be influenced by the culture and context in which the social interaction is situated. This means that student osteopaths training together may develop common 'taken-for-granted' assumptions of their professional role and identity (Richardson et al. 2002), such as emphasising the importance of anatomy and shared interest in biomechanics. Due to the long history of many of the OEIs in the UK, (with some dating back almost 100 years), each institution is considered to have developed its own 'flavour' with emphasis on a particular aspect of osteopathic practice (Section 2.5). However, this study found no relationship between participants' therapeutic approach and the OEI that they graduated from or which they worked.

8.2.2 Summary point 2

Differences in therapeutic approach led to variation in the focus of osteopaths' interaction with their patients and the cues they generated and interpreted.

The finding that there were differences in the focus of participants' interaction with patients has resonance with the literature. Practitioners' conceptions of professional practice (Fish and Coles 1998) and the assumptions and beliefs that they hold about the

body (Thornquist 1994, 2006) influence what they ‘see’, how they see ‘it’ and their resulting action and decision-making. While all participants’ assessment of their patients involved case-history taking, clinical examination and assessment, there was variation in their “gaze” (Thornquist 1994, p.9) during these clinical practices and procedures. This resulted in diversity regarding what clinical information participants found relevant, and where and how they focused their interaction with patients to generate clinical cues. This variation is discussed below.

Participants characterised as *Treaters* focused on patients’ movement and musculoskeletal problems. They examined the patients’ bodies, generating cues pertaining to the way the joints and tissues moved and felt to their touch. The nature of their focus and the hands-on way in which they interacted with patients, suggest a taken-for-granted assumption that the body is an objective natural entity (Nicholls and Gibson 2010) estranged from the patient or person (Marcum 2004). Their interaction was consistent with models of assessment and treatment in the osteopathic literature which places the physical and biological attributes of the patient’s body, such as its healing capacity and its structure and its function (Stone 2002; Seffinger et al. 2010; Cotton 2013), at the centre of clinical practice such as the ‘somatic dysfunction concept’ (DiGiovanna and Schiowitz 1997; Sammut and Searle-Barnes 1998), discussed previously in Section 4.2.3. The finding that some participants focused their interaction on the patient’s body concurs with the mechanistic view of the founder of osteopathy, Still, who considered “man as an engine and the osteopath as a human engineer” (Still 1897, p.374). This finding is also consistent with more recent osteopathic literature which proclaims that one of the most important goals of the osteopathic practitioner is to find disturbances and abnormal segments within patients’ bodies using hands-on examination and palpation procedures (DiGiovanna and Schiowitz 1997; Greenman 2003; Kappler 2003). Practitioner-patient interaction which emphasises patients’ bodies (such as their movement and physical/structural characteristics) limits practitioners’ understanding to that of the objective reality of patients’ anatomical, physiological and biomechanical dysfunctions (Nicholls and Gibson 2010). This view fails to connect the physical impairment with patients’ social world and lived experiences, which is necessary for a deeper understanding which is embodied and relational (Todres 2008, 2011).

Participants who were characterised as *Communicators* emphasised engaging the patient and interacting with them as a person. This finding has some resonance with the literature on ‘person-centred’ care (Ekman et al. 2011), which recognises more fully, the significance of knowing the person behind the patient. In this study, participants characterised as Communicators went beyond just understanding the patient’s diagnosis and functional problem, but also sought to develop and interact with the patient as a human being, and considered them as a person with “reason, will, feelings, and needs – in order to engage the them as an active partner in their care and treatment” (Ekman et al. 2011, p.249).

This study found that some participants characterised as Communicators used attributes of the self, such as humour, aspects of their personality and self-disclosure as ‘therapeutic tools’, during treatment and assessment. This finding is consistent with the concept of the ‘therapeutic use of self’ proposed and discussed in the psychotherapy (Rowan and Jacobs 2002; Shaw 2003), occupational therapy (Punwar and Peloquin 2000; Taylor 2008; Taylor et al. 2009) and nursing literature (Cumbie 2001; Freshwater 2002). It is maintained that the use of personal attributes as part of the therapeutic process offers alternative insights and perspectives, thereby facilitating professional judgement (Punwar and Peloquin 2000) and developing a therapeutic relationship (Rowan and Jacobs 2002). This study found that participants’ use of personal attributes was related to a professional artistry conception of practice. This finding concurs with the literature which proposes that part of professional artistry involves the ability to use the ‘whole self’, meaning that personal insights and knowledge should be employed purposefully and therapeutically during clinical practice (Higgs and Titchen 2001b; Higgs et al. 2008). The finding that some study participants used personal attributes for therapeutic purposes supports findings from research investigating clinical expertise (Jensen et al. 1990; Jensen et al. 1992; Jensen et al. 2000) and clinical reasoning (Fleming 1991b; Edwards et al. 2004a; Chaffey et al. 2010; Smith et al. 2010) in physiotherapy and occupational therapy.

This study found that participants characterised as *Educators* focused on the patients’ level of activity and day-to-day functioning. This finding has resonance with the literature. Facilitating patient empowerment so that they can be involved in decision-making about their treatment involves situating the patient at the centre of their care

(Lawn et al. 2011). The literature argues that in practice, enabling patient empowerment requires placing the patient as professionals in their own right and experts of their own care, bodies, symptoms and situations (Holmström and Röing 2010). This echoes with the finding in this study, in that those participants characterised as Educators focused their interaction on the patient in order to generate meaningful, patient-specific cues, pertaining to the impact that their pain and dysfunction has on their daily life and activity. The literature suggests that interacting and communicating in this way facilitates a patient-centred approach to education and self-management of patients, particularly those with chronic conditions (Klaber Moffett and Richardson 1997; Anderson and Funnell 2010; Holmström and Röing 2010).

8.2.3 Summary point 3

Clinical decision-making in osteopathy occurs with varying levels of patient involvement and is related to practitioners' conception of practice and therapeutic approach

This finding has resonance with the literature. Active patient involvement in decision-making is now widely considered a fundamental feature of good quality healthcare (Charles et al. 1997; Entwistle and Watt 2006; Department of Health 2012). Furthermore, the notion of active patient involvement is congruent with conceptions of patient-centred care (Mead and Bower 2000; Stewart 2001). Several models of patient involvement in clinical decision-making have been discussed in the literature, some of which resonate with the findings from this study, these are discussed below.

Participants characterised as Treaters adopted practitioner-led approaches to clinical decision-making. This approach was associated with minimal patient involvement, and it is consistent with 'paternalistic' models of decision-making described in the literature (Parsons 1951; Emanuel and Emanuel 1992; Deber 1994). The determination of these participants to obtain information from the patient's body through skilled analysis and examination placed little priority on exchanging or sharing information with the patient, implying an 'all-knowing' practitioner (Emanuel and Emanuel 1992). Even though the paternalistic model of care and decision-making has been heavily criticised in the literature (Ballard-Reisch 1990; Beisecker and Beisecker 1993; Thompson 2007), the finding that such a one-sided approach to practice is adopted by some osteopaths, is consistent with research in other manual therapy professions, including physiotherapy

(Thornquist 2001b; Cruz et al. 2012a; Cruz et al. 2012b) and Chiropractic (Langworthy and Cambron 2007). Furthermore, a practitioner-led approach to clinical decision-making appears to conflict with the standards of osteopathic practice set out by the GOsC which are explicit in stating that practitioners should “work in partnership with patients to help find the best treatment for them” (General Osteopathic Council 2012a, p.8). Whilst the hands-on skills and decision-making abilities of osteopaths may lead to high levels of patient satisfaction in some patient groups, an approach which promotes patient passivity may encourage patients to adopt a ‘sick role’, and put them at risk of becoming dependent on passive manual therapy treatment (Beisecker and Beisecker 1993). An approach to decision-making which fails to explore and consider patients’ perceptions and expectations may not help develop a patient’s sense of control over their problem (Klaber Moffett and Richardson 1997) and miss a valuable opportunity to enhance their self-efficacy (Bandura 1982).

When participants characterised as Treaters did attempt to ‘educate’ patients, its nature was predominantly transferring the anatomical, biomechanical and clinical facts from their clinical examination and the risks associated with their intended treatment strategies. Providing such minimal information is required in order to obtain informed consent from the patient, as required by the professional standards of practice set out by the GOsC (General Osteopathic Council 2012a). However, obtaining permission through informed consent does not equate to shared-decision making, rather it merely means that the patient has agreed to a procedure advised and decided by the practitioner (Bainbridge and Harris 2006).

The findings from this study indicate that participants characterised as Communicators adopted an approach to clinical decision-making which was shared with the patient and embraced an equal level of patient involvement, as is consistent with shared models of decision-making in the literature (Ballard-Reisch 1990; Charles et al. 1997; Charles et al. 1999b). A shared approach to clinical decision-making emphasises the patient as an active partner, and involves both the patient and practitioner sharing knowledge and information so that decisions can be mutually negotiated and agreed together (Charles et al. 1997; Charles et al. 1999b). This resonates with the finding that Communicators danced between leading the patient and being led by the patient; depending on the level of expertise and experience the person had on a particular issue (Charles et al. 1997). At

times these participants would take the lead such as in providing the patient with knowledge and information. While at other times, they encouraged the patient to lead the way, as they recognised they were ‘experts’ on issues such as their personal experiences and preferences. The finding that some participants shared clinical decision-making with patients is consistent with research into physiotherapy (Jensen et al. 2000; Edwards et al. 2004a; Edwards et al. 2004b). Practitioners characterised as Communicators nurtured a consensual approach towards the interpretation of clinical findings and the implementation of treatment and management strategies and this is consistent with Edwards’ notion of ‘collaborative reasoning’ (Edwards et al. 2004b) which is put forward in physiotherapy.

The findings from this study found that participants who were characterised as Educators adopted a patient-led approach to clinical decision-making and advocated high levels of patient involvement, analogous to the ‘informed choice’ (Gafni et al. 1998) and ‘consumerism’ models of decision-making (Emanuel and Emanuel 1992) in the literature. These participants would share information such as the nature of their diagnosis and possible treatment and management options. They would also encourage patients to express their own views and preferences regarding their problem and possible treatment and management options, thereby providing a channel for patients to exercise control, and thus facilitating empowerment (Emanuel and Emanuel 1992), and enhancing patient self-efficacy (Bandura 1982). These participants felt strongly that the patient’s autonomy should be valued and emphasised patients’ responsibility to make their own decisions, which is consistent with the informed choice models of decision-making (Gafni et al. 1998).

Approaches to clinical decision-making which place the patient as a consumer fits well with the current professional status of osteopathy, where more than 90% of patients self-fund their osteopathic treatment and the vast majority of practitioners work within private settings (General Osteopathic Council 2012d). However, there are several limitations of a patient-led approach (Emanuel and Emanuel 1992; Charles et al. 1999a; Charles et al. 1999b; Wirtz et al. 2006). For example, such a strong motivation to implement the patient’s wishes (such as their preferred treatment intervention) may result in practitioners taking the role of a detached ‘deliverer’ of patient’s requirements rather than a caring and connected ‘partner’ (Charles et al. 1999b). Moreover, while

osteopathic patients in the UK want and expect to be given choices and to be involved in decision-making, they also expected their osteopath to be caring, knowledgeable and want to be able to trust their professional opinion and decision-making (Leach et al. 2011).

Recent research exploring osteopathic patients' expectations shows that patients value and expect an approach to decision-making which is shared and tailored to them as an individual (Leach et al. 2011), and is in conflict with the patient-led and practitioner-led approaches to decision-making identified in this study. Partnership and information sharing is an expectation and preference of patients seeking complementary therapy (Richardson 2004) and primary musculoskeletal care (Parsons et al. 2012), and the finding that some osteopaths adopt one-sided approaches to decision-making is of concern.

8.2.4 Summary point 4

Experienced osteopaths' conceptions of practice varied between technical rationality and professional artistry and influenced their therapeutic approach.

Participants' conception of practice was considered to be how participants viewed the nature of their practice, including aspects such as knowledge, tasks, skills, activities and decision-making (Fish and Coles 1998). Study participants conceived practice as either technical rationality or professional artistry, and their overall conception of practice influenced their therapeutic approach. Half of the study participants conceived practice as technical rationality and half conceived practice as professional artistry. The finding that there was variation in how participants viewed practice and knowledge is strongly aligned with the literature. The nature of knowledge and its relation to professional practice has featured in the literature for over a century (Ryle 1949; Polanyi 1967; Schön 1983; Eraut 1994; Higgs and Titchen 2001a) and far beyond (Aristotle 1975).

Participants with a technical rational conception possessed a lens which offered an uncomplicated, mechanical view of clinical practice, their patients and their problems. A clinical 'gaze' which is fixed upon the patient's physical problem fails to consider the patient as a whole or their lived context (Marcum 2004). These participants adopted examination approaches which emphasised obtaining factual knowledge, with a particular focus on the characteristics of the patient's body and tissues and how these

related to the patients' pain, dysfunction and associated symptoms. Viewing practice as uncomplicated, and knowledge as certain and permanent, is akin to Schön's view of the 'hard high ground' of professional practice (Schön 1987). These participants were practitioner-centred in their goal to obtain clinical knowledge and deliver the most appropriate treatment, resulting in an approach to clinical decision-making which was one-sided and paternalistic (Emanuel and Emanuel 1992). For participants with a technical rational conception of practice, involving the patient in the decision-making process was not a priority, and they tended to be characterised as Treaters.

The finding that some participants focused on their own perception, analysis and interpretation of clinical data and application of their technical hands-on skills (for example, performing examination procedures which focused on assessing joint and soft tissue mobility restrictions, postural alignment and symmetry and abnormal patterns of movement) is consistent with a technical rational view of practice (Fish and Coles 1998). Conceiving practice as technical rationality involved the well-skilled practitioner applying propositional scientific knowledge (for example, biomechanical and anatomical theories) to achieve a desired therapeutic goal, such as an improvement in joint and tissue mobility. This approach resonates with Aristotle's concept of *techné*, which is concerned with the application of technical knowledge to obtain a goal-orientated outcome (Tyreman 2000). This finding is consistent with findings from research investigating the clinical practice and reasoning of manual and physical therapists (Noll et al. 2001; Thornquist 2006; Cruz et al. 2012a). Practice akin to technical rationality has been considered an attribute of novice healthcare practitioners (Jensen et al. 1990; Jensen et al. 1992; Unsworth 2001; Smith et al. 2008a; Smith et al. 2010), where practice is characterised as being practitioner-centred, emphasising the application of specific factual knowledge and technical skills in a routine predictable manner. However, this study found no relationship between participants' level of clinical experience and their conception of practice. This finding is consistent with existing research (Resnik and Hart 2003; Resnik and Jensen 2003; Petty et al. 2011a), and theories of expertise (Schön 1987; Eraut 1994), thereby supporting the notion that the development of clinical expertise and artistry, encompasses more than experience alone.

This study found that some participants held conceptions of practice akin to professional artistry (Schön 1987; Fish and Coles 1998), and is consistent with research conducted in other healthcare professions including physiotherapy (Jensen et al. 2000; Edwards et al. 2004a; Smith et al. 2008a; Smith et al. 2010), and occupational therapy (Fleming 1991a, 1991b; Paterson et al. 2005, 2006). Participants that conceived practice as professional artistry acknowledged the complexities and ambiguities of practice and embraced seeing practice from different viewpoints, especially patients' illness perspectives (Marcum 2004). These participants could respond to the individuality of patients' preferences, expectations and illness experiences so that clinical actions (such as their examination and management) and decisions, accounted for the complexity of the situation and the individual patient. This resonates with the Aristotelian concept of *Phronesis*, which involves practitioners' knowledge and understanding of what to do in response to the complex challenges and ambiguous situations of practice (Tyreman 2000). For these participants, action was morally appropriate and fitted the particulars of the patient and their situation, exhibiting a characteristic of practice which may be considered a form of 'practice wisdom' (Eraut 1994).

In this study, participants that conceived practice as professional artistry were able to bring together knowledge from different sources in an individual and patient-specific way so that they could navigate and make sense of the 'swampy lowlands' of practice (Schön 1987). They were comfortable with viewing practice as 'swampy' and complex, and did not resort to the simple application of rules, theories and procedures to negotiate practice situations. They had developed individual styles and approaches to practice, blending together their own personal attributes with their practice skills creatively and imaginatively (Higgs and Titchen 2001b). These practitioners did not rely on osteopathic theories or rules to guide them or their decision-making, and they tended to make decisions in collaboration with the individual patient and their situation.

The finding that some practitioners viewed practice as technical rationality is in divergence with the continued movement of many professions towards patient-centred healthcare (Mead and Bower 2000). Throughout the world osteopathy is often considered to be a patient-centred approach to healthcare (Osteopathic Council of New Zealand 2010; World Health Organisation 2010; Osteopathy Board of Australia 2011), and throughout the osteopathic literature patient-centredness is considered to be a strong

and defining feature of osteopathy (Stone 1999; Bates 2010; Butler 2010). However, this assertion is questioned by the finding that some experienced osteopaths adopt practitioner-centred approaches to clinical decision-making and practice. During the last fifteen years, the osteopathic standards of practice in the UK have emphasised the performance of technical clinical skills and the acquisition and maintenance of propositional knowledge for sound clinical decision-making (General Osteopathic Council 1998, 2012a). Recent research investigating assessment methods used in undergraduate osteopathic education suggests that technical rationality predominates (Vaughan et al. 2012), and that technical skills and knowledge are commonly assessed through Objective Structured Clinical Examinations (OSCEs). Furthermore, osteopathic education in relation to hands-on skills has remained unchanged for several decades (Browning 2010). Commonly, the lecturer demonstrates a clinical technique and then instructs student to copy and practice the technique or procedure on a peer (Wallace 2008). This teacher-centred approach to teaching is both paternalistic and technical rational and may nurture an ongoing culture focused on technical knowledge and hands-on skill.

8.2.5 Summary point 5

Experienced osteopaths' conception of practice is influenced by a number of factors.

This study identified a number of factors which influenced or were associated with participants' conception of practice. These factors are consistent with the literature and include educational experience (Petty et al. 2011a, 2011b), view of health and disease (Marcum 2004), and epistemology of practice knowledge (Schön 1987; Fish and Coles 1998; Richardson et al. 2004). These are discussed below.

There is a growing body of research which provides an understanding of how postgraduate research influences and develops professional practice in a range of healthcare professions, including physiotherapy (Stathopoulos and Harrison 2003; Green et al. 2008; Rushton and Lindsay 2010; Perry et al. 2011; Petty et al. 2011a, 2011b), occupational therapy (Alsop and Lloyd 2002; Conneeley 2005) and nursing (Spencer 2006; Drennan 2008; Park et al. 2011). Postgraduate education that advocates student-centred learning emphasises the role and responsibility of the learner in the construction of knowledge (O'Neill and McMahon 2005). The finding that participants

with postgraduate learning were more critical and reflective of practice knowledge, norms and traditions is consistent with the literature. Postgraduate learning at Master's level may have challenged participants previously established views and beliefs of professional practice (Perry et al. 2011), such as traditional thinking and taken-for-granted assumptions (Park et al. 2011). In addition to enhancing knowledge (Stathopoulos and Harrison 2003), postgraduate learning may develop participants' capacity to critically evaluate practice knowledge and improve their clinical decision-making skills (Alsop and Lloyd 2002; Rushton and Lindsay 2010; Petty et al. 2011a, 2011b).

The findings suggest that participants with postgraduate Master's degrees tended to learn from their experience with patients and develop personal theories of practice. In comparison, participants without postgraduate education tended to rely on specific practice traditions, and apply external theories or particular osteopathic practice routines. These findings are consistent with recent research into the learning transitions of musculoskeletal physiotherapists, which suggests that postgraduate Master's learning may facilitate a practitioner's movement towards expertise and professional artistry (Petty and Morley 2009; Petty et al. 2011a, 2011b).

The finding that study participants emphasised the biomedical aspects of the patient's pain and dysfunction during their examination, treatment and management is in conflict with the osteopathic practice models and principles (Rogers et al. 2002). The osteopathic tenets (Special Committee on Osteopathic Principles and Osteopathic Technique by Kirksville College of Osteopathy and Surgery 1953), in their varying revisions recognise the intimate interaction of the mind, body and spirit in health and disease, and are thought to be largely consistent with the biopsychosocial model (Penney 2010).

In light of the global spread of the biopsychosocial model of care as a result of a general dissatisfaction with the conventional 'biomedical model' of care, the finding that some participants took a biomedical view of their patients is a concern. Adopting a biomedical approach reduces patients down to a collection of clinical signs and symptoms, embodying a specific disease classification or diagnosis (Engel 1977). The findings from this study showed that participants characterised as Treaters tended to

possess a biomedical view of health and disease. The major task of these participants was to identify the physical dysfunction which lay within the patient's body and then by using knowledge of biomechanics, anatomy and physiology they proceeded to direct treatment to the problem. This narrow and uncomplicated view of health and disease was associated with a technical rational conception of practice (Fish and Coles 1998).

The physical and manual therapy professions are continuing to grow and are becoming increasingly competitive⁶⁶ in the provision of musculoskeletal care (Foster et al. 2012; National Health Service 2012). The wide range of literature and CPD courses currently available, provide opportunities to cross pollinate knowledge and skills between different healthcare professions. This may be particularly significant in relation to those professions where there are significant similarities, as is the case of the major manual therapy professions: osteopathy, physiotherapy and chiropractic. In response to such forces, some members of the osteopathic profession, in an attempt to remain 'pure' and appear distinct, may uncritically adhere to traditional osteopathic theories and models which overly emphasise the body, and its specific parts and segments (for example, Dove 1967; Mitchell and Mitchell 1995). Many of these models are over fifty years old, and while their positivist and biomedical slant reflects the period in which they were conceived, they currently feature strongly in osteopathic philosophy, practice and undergraduate education. Uncritically accepting and rigidly applying dualistic theories, in light of the widespread acknowledgement of the social, psychological and behavioural factors of health, pain and disability (Engel 1977; Jones et al. 2002) may jeopardise the osteopathic profession's development and credibility and perhaps most importantly, fail to optimise patient care.

The findings suggest that some participants (those characterised as Communicators and Educators), held views of health and disease consistent with the biopsychosocial model (Engel 1977, 1980). These participants embraced developing the two-way practitioner-patient relationship and they sought to share knowledge with patients and involve them in decision-making. In doing so, these participants emphasised the social and

⁶⁶ As part of wider healthcare reforms, the NHS will cease to make a distinction between the registered/regulated manual therapy professions (osteopathy, chiropractic and physiotherapy) when commissioning manual therapy services. All practitioners from the three respective professions must apply for 'Any Qualified Provider' (AQP) status, in order to be considered an 'approved supplier' of healthcare services to the NHS (National Health Service 2012).

psychological aspects of disability as well as the 'medical' or 'biological' dysfunction, consistent with more contemporary views of health and disease (such as the biopsychosocial model) in the literature (World Health Organisation 2001; Jones et al. 2002). The finding that Communicators and Educators emphasised the personal meaning of illnesses and the lived context of their pain and suffering suggests an embodied view of health and disease (Marcum 2004). Considering the patient as an active participant in their healthcare is consistent with conceptions of patient-centred care and shifts the patient-practitioner relationship from one which was originally asymmetrical and paternalistic (as in the case of the Treater) to one which is mutual and egalitarian (Mead and Bower 2000).

How participants conceived their practice influenced their view of knowledge (i.e. their epistemology of practice knowledge). Participants that conceived practice as technical rationality emphasised the facts of the clinical situation and the patient's problem. They sought to define the problem in anatomical and biomechanical terms, which could be investigated, tested and addressed through specific practices and procedures. These participants considered that they could make discoveries and obtain clinically relevant knowledge through what Schön would describe as "the application of theory and technique derived from systematic scientific knowledge" (Schön 1987, p.3-4). This finding is consistent with an epistemology of practice knowledge aligned to a positivism (Kinsella 2007). Such an epistemology was associated with participants characterised as Treaters. In contrast, participants who conceived practice as professional artistry, held quite different views of knowledge, which were more aligned with a constructionist view. The association between professional artistry and constructionism is consistent with the literature (Higgs et al. 2004b; Kinsella 2006), and for some of the participants in this study, meant that they recognised that there were multiple ways in which to see the clinical situation, and acknowledged the multiplicity of patients, their values, needs and preferences (Richardson et al. 2004). These participants tended to be characterised as Communicators and Educators.

8.2.6 Summary point 6

The diagnostic reasoning of experienced osteopaths involved the interaction of hypothetico-deductive reasoning and pattern recognition approaches.

The study found that when formulating a diagnosis all participants adopted two cognitively based clinical reasoning approaches, consistent with the medical literature, namely hypothetico-deductive reasoning (Elstein et al. 1978) and pattern recognition (Arocha et al. 1993). In this study, there was interplay of hypothetico-deductive reasoning and pattern recognition, as a result of the perceived level of complexity and degree of familiarity of the patient presentation. This finding supports existing research in physiotherapy (Embrey et al. 1996; Doody and McAteer 2002; Edwards et al. 2004a; Smith et al. 2010) and occupational therapy (Fleming 1991a; Mattingly 1991b), that experienced practitioners are able to ‘move between’ diagnostic reasoning approaches to enable them to diagnose the patient’s pain and dysfunction safely and effectively.

The context under which both diagnostic reasoning approaches occur, is also consistent with the literature on diagnostic reasoning (Patel and Groen 1986; Elstein 2009) and more general theories of human cognition and decision-making (Croskerry 2003; Evans 2008; Croskerry 2009) (Sections 4.4.2 and 4.6.6 respectively). Under conditions of familiarity, whereby the experienced practitioners recognised characteristics of the patient (for example, age and general appearance), and characteristics of their illness presentation (for example, the location and severity of pain, and associated symptoms), they recognised patterns and relationships between different cues. This enabled practitioners to formulate early diagnostic impressions and hypotheses based on the similarity between the present situation and previous experience, thereby inductively building diagnoses. This finding suggests that experienced practitioners possessed a well organised knowledge base (Schmidt et al. 1990) and countless similar exemplars (Norman et al. 2007), which they could ‘activate’ immediately and automatically. This inductive approach to diagnostic reasoning is considered to be a central element of clinical reasoning expertise (Benner et al. 1996; Doody and McAteer 2002; Jensen et al. 2008; Smith et al. 2010). When faced with an unfamiliar patient or complex presentation, participants in this study, deliberately and consciously used a hypothetico-deductive approach to diagnostic reasoning (Elstein et al. 1978). Hypothetico-deductive reasoning involved practitioners systematically acquiring and validating cues through a

deliberate process of ‘observation and measurement’ so that hypotheses could be rejected, accepted or refined (Elstein et al. 1978; Edwards et al. 2004a).

The findings from this study support the idea that metacognitive processes form the link between hypothetico-deductive reasoning and pattern recognition. Regardless of therapeutic approach, all participants in this study demonstrated the capability to reflect on their diagnostic reasoning processes, and this finding is consistent with the literature which argues that metacognitive skills are associated with well developed clinical reasoning capabilities (Arocha et al. 1993; Edwards et al. 2004a). When diagnostically reasoning, participants reflected on the nature of the situation, such as its complexity and familiarity, and monitored their diagnostic reasoning processes. This finding concurs with Eraut who posits that when practitioners are confronted with a problem, they rapidly read the situation and proceed in a state of “continued alertness” (Eraut 1995, p.15). The findings that experienced osteopaths adopt hypothetico-deductive and pattern recognition approaches to diagnostic reasoning lends support to models of diagnostic reasoning proposed theoretically in the osteopathic literature (Smith 1971b, 1971a; Sprafka 2003).

In summary, this is the first study to investigate the clinical decision-making and therapeutic approaches of osteopaths. The findings from this study suggest that the way in which experienced osteopaths approach practice and decision-making is largely based on how they conceive practice. Participants’ conceptions of practice lay on a continuum, ranging from technical rationality to professional artistry. Those participants that conceived practice as technical rationality adopted practitioner-led approaches to clinical decision-making, and were characterised as Treaters. Participants that conceived practice as professional artistry adopted therapeutic approaches which emphasised collaboration-communication and empowerment-education, and were characterised as Communicators and Educators respectively. These latter two therapeutic approaches were associated with shared and patient-led clinical decision-making, respectively. Study participants’ conception of practice was influenced by a host of factors, which were: educational experience, view of health and disease, epistemology of practice knowledge, theory-practice relationship, and participants’ perceived therapeutic role. These influencing factors contributed to shifting participants’ conception of practice along the technical rationality-professional artistry continuum.

The substantive theory of clinical decision-making and therapeutic approaches developed from this research study offers an original contribution to the knowledge base of the osteopathic profession. The next section considers the authenticity of the research findings and then my final reflection on the research journey and the impact I had on the study's findings is presented.

8.3 Authenticity

In addition to the measures taken to ensure the trustworthiness of this study (outlined in Section 5.7) which may be seen as ensuring the methodological adequacy of this research (Holloway and Wheeler 2002), this section will discuss the authenticity of the study and its findings. Originally developed by Guba and Lincoln (1989), the criteria of authenticity consider the wider impact that the research findings have on social and political issues (Bryman 2008b). Authenticity consists of five criteria; fairness, ontological, educative, catalytic and tactical authenticity (Lincoln et al. 2011). These five criteria are discussed in relation to this study below.

Fairness refers to the balance of the study and that the findings should reflect all participants' views, perspectives, and concerns, and that "all voices should be heard" (Lincoln et al. 2011, p.122). In this study, interviews were transcribed verbatim and a broad range of quotes were selected so that the views and perspectives of each individual participant contributed to the construction of the substantive theory.

Ontological authenticity and educative authenticity are considered to be criteria of 'knowledge sharing' (Morse et al. 2002). Specifically, ontological authenticity results in an "improvement in the individual's (or group's) conscious experiencing of the world" (Lincoln and Guba 1986, p.81), whereas, educative authenticity refers to whether there is an increased appreciation and understanding of other's constructions (Lincoln and Guba 1986). Both of these criteria refer to the raised awareness of participants and readers of the research, helping them to understand their social worlds and the perspectives of other people (Lincoln et al. 2011).

On several occasions, study participants commented on the positive impact taking part in the study had on them, implying that the research had some ontological authenticity.

For example:

The good thing about the interview is that it made me think about what I do and why I do it. So that is a real positive. (P1, 2)

For most participants, the process of discussing their clinical practice and reasoning, and of reading the interview transcripts (as part of the process of member checking), encouraged them to reflect upon taken-for-granted knowledge and practices. When presenting parts of the substantive theory at conferences and in-house seminars, feedback from the audience was generally positive, and the findings appeared to resonate, and illuminate for them, aspects of their practice and decision-making which they may not have otherwise considered. This suggests that the study had some ontological and educative authenticity.

Catalytical authenticity and tactical authenticity are criteria of social action (Morse et al. 2002), whereby the findings of the study enhance participants decision-making and facilitate empowerment (Lincoln et al. 2011). Specifically, catalytical authenticity refers to the extent to which the new understandings and appreciations result in some action(s) being taken or decision(s) made by the study participants (Lincoln and Guba 1986). Whereas, tactical authenticity refers to the degree to which participants are empowered to act in response to an increased understanding that developed as a consequence of the study (Onwuegbuzie et al. 2008).

Through deliberating and reflecting on their practice during interviews, participants appeared to learn about themselves and how they practiced and reasoned, suggesting some catalytical and tactical authenticity of the study's findings, as illustrated by the following comment:

...it's [taking part in the research] been very interesting. I suppose I should reflect on things more often, but until I'm subject to an interview, I never really thought about 'how I thought about it, or how I didn't' [think about it]. I was looking forward to this [interview] because I knew that something interesting would come up, and I have discovered a bit more about myself, [so] I think it's been very valuable for that reason. (P3)

Sharing the theoretical model with some of the study participants during the second interview allowed me to determine the resonance of the theory with the study participants and enabled further development. During this aspect of member checking, many of the participants were enthusiastic about the theory, and felt that one of the three therapeutic models broadly captured their own approach, as illustrated by the following two comments:

Now that you've read it to me it makes perfect sense, I don't disagree with that at all. I think you've pegged me right! (P8, 2)

I really like those [therapeutic models]. I'm probably a spectrum; I'd be more towards the 'Communicator', [but] with aspects of the 'Educator'...but if you had to put me in one I would have said the 'Communicator'. (P7, 2)

This section has discussed the authenticity of the findings generated in this study. The data presented in this section suggests that participants viewed the research as authentic and credible. This implies that the theoretical model may represent an appropriate reporting of participants' therapeutic approaches and clinical decision-making.

The next section presents a final reflection on the research journey with the acknowledgement and discussion of how I influenced the research process, and the ways in which I may have had an impact upon its findings.

8.4 Final reflection on the research journey

Qualitative research recognises that the researcher influences and shapes the research process; therefore, I am driven to consciously reflect upon the ways in which I may have impacted upon the research and its findings. This is especially important when

using constructivist grounded theory, as the researcher is an active member of the research process and in the construction of the developed theory.

Sharing my research experiences and acknowledging my a priori knowledge, personal values and beliefs and how these influenced the methodological and analytical judgements made during this research helps to enhance the trustworthiness of the findings (Cutcliffe 2003). The process of reflexivity has been threaded throughout this thesis. In Chapter 1, I explained the personal motivation for this research and how my professional experiences drove me to conceive the research area and to develop the research aims and questions. In the methodology chapter (Chapter 5), I began by offering an open account of my role as an insider researcher and the challenges and opportunities that such a position affords. In the methods chapter (Chapter 6), I critically reflected on my relationship with the study participants during interviews, the influence this had on the research; and on how such issues were managed. Finally, in the data analysis section in Chapter 6, I articulated how I made the ‘theoretical linkages’ (Birks and Mills 2011) and interpretations which have resulted in the development of the substantive theory presented in this thesis. In this section I reflect on the research journey and the effect that it had on me, and I had on it.

At many points during my work as a clinical tutor and lecturer I became frustrated with the uncritical culture of the osteopathic profession and the common belief that practice was based on traditions handed down from previous generations of practitioners and influential individuals. This frustration grew further during my time practicing and lecturing in Sweden, where osteopathy is still in its infancy and doesn’t receive the same professional recognition as it does in the UK and elsewhere in the world. Here, I was surrounded by practitioners who appeared to practice osteopathy as a discrete ‘cult’; they were unquestioning, defensive and intent on maintaining their ‘osteopathicness’ in response to feeling that they were ‘under siege’ by more established manual therapy professions. During this time I gradually grew more and more disillusioned with osteopathy and moved back to the UK to embark on further study. Whilst these experiences and frustrations fuelled my motivation for PhD study, they could have impacted upon the findings that this study has generated. For example, the uncritical osteopaths that frustrated me during my time in Sweden exhibit a number of characteristics of the Treater therapeutic model constructed in this study. However, I

argue, that I countered this temptation by being critically reflexive throughout the course of the study. By maintaining a reflexive diary and memo-writing throughout the research, I could make explicit these beliefs and feelings and how they shifted and impacted data analysis. This enabled me to challenge my assumptions and test how they impacted data analysis (Cutcliffe 2003) lending to the trustworthiness of the findings.

One significant challenge was the process of making an informed decision about the epistemological direction that the study would take, and specifically the decision as to which research paradigm I would locate this study within, as this would influence the particular grounded theory approach I would employ. In view of the research questions and aims (Section 4.7) which emphasised ‘process’, ‘understanding’ and ‘variation’, the chosen paradigm and therefore the type of grounded theory would need to assume that there are multiple meanings which are constructed by people while they interact with the world which they are interpreting. Specifically, I wanted to understand how osteopaths approach practice and make clinical decisions with regard to diagnosis, treatment and management of their patients. In order to do this, I would have to interpret their meanings and actions as they would have to interpret mine (Charmaz 2006).

The process of settling on the research paradigm and approach to grounded theory involved reflecting on my own beliefs and views of knowledge, so that I could identify my own epistemological and ontological position. This enabled me to locate myself and this research on the ‘methodological spiral’ of grounded theory, so that I would feel theoretically secure and be able to live out my beliefs during the study (Mills et al. 2007). In reflecting on my own philosophical position it seemed that my undergraduate and postgraduate science degrees and background in quantitative research had unknowingly ‘moulded’ me as a positivist. I hadn’t actively selected this position, but rather my previous experiences had only exposed me to the dominant positivism/post-positivism of healthcare research and practice. It took a number of months for me to explore my assumptions and familiarise myself with the variety of other ontological and epistemological positions and the different schools of grounded theory. By going back and forth between the literature on grounded theory and qualitative research and keeping a reflexive journal, I was able to make an informed choice, so that the approach to grounded theory adopted in this study was appropriate.

The actual practices and procedures of grounded theory research posed some initial challenges for me. At points during the study I found the process of coding data in accordance with my own interpretations a challenge, and my initial coding efforts leaned towards superficial description rather than abstract interpretations. I suspect that this difficulty was down to my inexperience of qualitative research and grounded theory. I grew frustrated at my inability to develop a theory which had explanatory power and could account for the variations in the data, specifically the variation in how participants viewed and talked about their practice. Constant iteration between data analysis and engagement with the literature for analytical insights in combination with memo-writing helped to overcome these challenges and moved my theory towards a higher level of abstraction.

Another challenge was identifying a core category which would sufficiently organise the data, and during this process I went down a number of theoretical dead ends. Throughout this period I wrote and re-wrote the theoretical storyline, and repeatedly drew the theoretical model in different forms, arranging the data in various ways. Finally, auditioning different categories to act as an organising ‘perspective’ proved a very useful strategy for helping to view my data from a variety of viewpoints and eventually helped to ‘choreograph’ (Kools et al. 1996) the categories which led to the theoretical model offered in Chapter 7.

Another challenge was re-focusing the research questions and aims in response to the data and the developing theory, as outlined in Section 4.7. At the outset of the PhD, I clearly set out in my ‘Research Plan Approval’ documents that the study was to focus on investigating the clinical reasoning processes of experienced osteopaths in the UK, and I was inspired by similar research conducted by other healthcare professions (Fleming 1991a, 1991b; Jensen et al. 2000; Edwards et al. 2004a). However, as I began to interact with the data during analysis I evaluated the fit between my initial research interest and the data. By remaining open and following leads in the data (Charmaz 2006), I felt compelled to explore topics which I had not anticipated, such as how participants viewed their practice and interacted with their patients, their therapeutic approach and how these aspects influenced their clinical decision-making. During this period of data collection and analysis it became clear that I needed to explore these areas in order to ‘get behind and underneath’ participants’ clinical decision-making and

develop a substantive theory which was sufficiently abstract and had explanatory value. This period exemplified for me the organic and exploratory nature of qualitative research, and in particular the uncertainty associated with grounded theory which I had read about but never experienced.

A criticism often levelled at qualitative research and especially from classic grounded theorists (Glaser 2002), in reference to researchers adopting a constructivist grounded theory approach, is the notion of ‘forcing theory’ based on preconceived ideas, assumptions and theories. I would argue that I guarded against forcing theory by staying close to the data, keeping an open mind and regularly logging into my reflexive journal to note how my lens influenced how I ‘saw’ and interpreted the data (Charmaz 2006). Additionally, checking the developing theory with colleagues and participants throughout the course of the study enhanced the credibility of the substantive theory. Moreover, at the forefront of my mind throughout the research process was the recognition that the ultimate goal of grounded theory, as emphasised by Glaser and Strauss (1967) is to facilitate the *generation* of a new substantive theory rather than *verification* of an existing one.

The research journey has had a profound personal impact on me and my roles as a practitioner and an educator. Prior to commencing the study I was frustrated that osteopaths were not practising ‘correctly’ or meeting my personal standards of criticality. This view reflects my objectivist ontological starting point. My training as an osteopath, research background and subsequent postgraduate Master’s Degree in Sports and Exercise Rehabilitation was drenched with the positivist view of knowledge and reality. As a student and eventually a practitioner, I was continually exposed to the ‘hard sciences’ of anatomy, physiology, biomechanics, and pathology. I was led to believe that a deep knowledge of these subjects would provide the ‘answers’ to all situations encountered in clinical practice. I used the ‘precision’ of positivist knowledge, in clinical practice, such as quantifying joint range of motion and in my lecturing career, for example, when teaching biomechanics or clinical skills to osteopathic students. Whilst I embraced qualitative research, I struggled with the transition from practitioner/educator with positivist epistemology to an interpretive qualitative researcher. This research process has resulted in me questioning the fundamental beliefs about knowledge and reality that I had taken-for-granted in my own practice, and made

for an experience which at many times was personally challenging and uncomfortable. However, as the study progressed, I recognised the multiple perspectives and multiple truths of individual practitioners and I mellowed in my determination for ‘all’ osteopaths to practice in a way which I considered to be correct. This represents my shift from a quantitative researcher which requires a ‘hardnosed’ scientific approach, to a qualitative researcher which necessitates a softer and more flexible approach.

Whilst I always felt confident in my clinical decision-making capabilities, in the process of completing the study I became much more comfortable with the uncertainty and complexity of practice. My experience of listening to participants and exploring their practice perspectives developed my own practice and moved me towards a more complicated view of practice. I now embrace the notion that clinical practice has room for many different types of knowledge and practitioners, and I feel that my own conception of practice has shifted towards one akin to professional artistry.

This section has critically evaluated the authenticity of the substantive theory developed from this study. This study generated knowledge of how experienced osteopaths conceptualise their practice, their therapeutic approaches and their approaches to clinical decision-making. The implications that these findings have for practice, education and research are discussed in the following section.

8.5 Implications for practice

The finding that some osteopaths exhibit professional artistic and patient-centred practice is encouraging. The findings also suggest that some practitioners have approaches to clinical decision-making and practice which have real merit and value. However, the finding that some practitioners conceive practice as technical rationality and adopt practitioner-centred approaches, is concerning and may not be entirely congruent with shared models of decision-making promoted by the GOsC (General Osteopathic Council 2012a) and more widely by the NHS (Department of Health 2012). As almost 90% of patients self-fund their osteopathic services (General Osteopathic Council 2012d), practitioners may consider that a paternalistic approach to care, best-serves their ‘customer’. However, if some osteopaths are not promoting patient-centred, shared models of clinical decision-making in their private practice, then this may present difficulties for future opportunities of integration and collaboration with the

NHS, where shared models of decision-making are currently being promoted (Department of Health 2012).⁶⁷

This study found that practitioners who conceived practice as technical rationality emphasised propositional knowledge and relied on the application of ‘espoused’ osteopathic theories and concepts to guide and shape action (Argyris and Schön 1974). A strong disposition to knowledge and theory *application* during practice, rather than knowledge and theory *generation* from practice, could inhibit practitioners’ ability to learn from practice and develop their own personalised ‘theories-in-use’ (Argyris and Schön 1974). This would inhibit practitioner development, and encourage routine and practitioner-centred practices. If practitioners overly rely on espoused theories, (for example, the osteopathic principles and traditional concepts) they may not be able to effectively negotiate the complexities of professional practice. Existing theories should not be applied directly and uncritically to practice, but should be interpreted, personalised and transformed by the practitioner so that they can be incorporated into the practitioner’s practice knowledge and thus guide action (Eraut 1994). Such rigidity of practice may result in practitioners fitting the patient and the situation to the theory rather than learning from practice and flexibly employing theories-in-use for a particular situation and a particular patient. Furthermore, if practitioners fail to develop knowledge from practice then the osteopathic profession risks being confined to an old-fashioned craft group, rather than a progressive, dynamic and reflective profession.

Working in the ambiguity of practice requires professional practitioners to recognise the nature of the knowledge used in practice and how this knowledge may be used to develop expertise. This study provides knowledge of how practitioners view the nature of practice, their clinical decision-making and their therapeutic approaches, and should help contribute to an epistemology of osteopathy. Developing a well-rounded understanding of the epistemology of practice of the osteopathic profession may allow for the exploration of the tacit or non-propositional knowledge used by osteopathic practitioners, as they work through the problems of daily practice (Raelin 2007). The findings from this study have helped to provide an understanding of what drives the

⁶⁷ The on-going consultation by the Department of Health, titled ‘Liberating the NHS: No decision about me, without me’, aims to secure shared-decision-making and encourage greater patient control over their NHS care.

actions of osteopathic practitioners, which is an important step in understanding how practitioners learn from practice and develop as practitioners (Richardson et al. 2004).

The findings from this study suggest that some participants adopted models of practice which focused on the identification of physical dysfunctions within the patient's body regions. Such a focus on the physical 'osteopathic' impairment sidelines the patient and relegates their individual illness experience. Throughout the history of osteopathy, numerous theoretical practice models have been espoused often from eminent and famous individuals from specific corners of the osteopathic profession (for example, Still 1910; Wernham 1978; Kuchera and Kuchera 1994; Mitchell and Mitchell 1995; DiGiovanna and Schiowitz 1997; Sammut and Searle-Barnes 1998; Gibbons and Tehan 2009). Many of these models and theories place the 'body' at the centre of practice, and offer ways in which the practitioner can correct and restore health to the patient. Such practitioner-centred approaches advocate inequality and promote patient passivity and practitioner paternalism. The profession has to review such models and be confident in letting go of those theories and models which promote dualistic thinking, patient passivity and paternalistic care. Furthermore, there may be resistance from practitioners who consider such practitioner-centred approaches to be 'traditionally osteopathic' and to form part of their 'unique selling point' within the competitive market of private manual therapy practice. If the profession fails to do so it risks being excluded from mainstream healthcare, policy and decision-making.

These findings also suggest that there is diversity in how osteopaths conceptualise patient-centred care. For Treaters, patient-centred care involved doing the best *to* and *for* the patient, with the best of intentions. In this regard, it is possible that participants who were characterised as Treaters considered themselves as being patient-centred. Other participants, who were characterised as Communicators or Educators would have conceived patient-centred care quite differently, focusing on forming and developing a therapeutic relationship, sharing knowledge and decision making. Future research should explore both osteopaths' and patients' perceptions and conceptualisations of patient centred-care, so that it can be better incorporated into practice and education.

The addition of the substantive theory to the knowledge-base of osteopathy may assist practitioners and those involved in clinical education to reflect and consider their clinical decision-making and their therapeutic approaches to practice.

8.6 Implications for education

The finding that there is variation in practice approaches should be taken into account in undergraduate training. Osteopathic educators need to consider how they can identify, monitor and guide the development of students' conceptions of practice, therapeutic approaches and decision-making, and how these aspects relate to the expectations of stakeholders and values and mores of the profession. Students holding different views of knowledge and practice may require different approaches to learning (Lindquist et al. 2010).

The finding that practitioners possess different foci of interaction with patient challenges osteopathic educators to structure curricula, teaching and assessment so that hands-on skills and technical knowledge do not dominate the practice of future osteopaths. Undergraduate curricula should be developed so that there is an equal emphasis on the development of skills other than hands-on skills. Learning should also be focused on developing emotional self-awareness, communication, interpersonal skills and the therapeutic use of self (Taylor 2008).

The findings from this study suggested that postgraduate education was associated with professional artistry. This implies that currently undergraduate osteopathic education may promote technical rationality, practitioner-centred approaches to practice and practitioner-led clinical decision-making. The traditional model of curriculum in healthcare and osteopathy education has been the pre-clinical/clinical model. During the pre-clinical years teaching may focus on 'core' science subjects and hands-on technical skills which may be taught in a didactic fashion and copied by the student (Wallace 2008; Browning 2010). When undergraduate teaching takes a didactic form, knowledge is *given* by the teacher to be uncritically *received* by the student (O'Neill and McMahon 2005). Once students have acquired the technical knowledge and skills they are then required to apply them (with guidance and under supervision) in practice (Wallace 2008). An undergraduate curriculum which is excessively skill-based may not promote

critical evaluation or prepare students for the life-long learning necessary for professional practice.

If curriculum planners excessively focus on propositional knowledge (such as the biomedical sciences) and technical skills, students and novice practitioners may not develop to become adaptable, reflective and thinking practitioners, able to navigate through a professional practice setting which is complex, uncertain, unstable, unique and value-laden (Schön 1983). In order for OEIs to ensure that future graduate osteopaths are self-reliant, autonomous, critical and self-reflective, educators need to examine aspects of osteopathic education, including the teacher-student relationship and the epistemological basis of the curriculum (French and Cross 1992). The educational skills of clinical tutors could be further developed so that they can work with students to emphasise learning from practice and decision-making, in order to promote an engaged and active learning process during clinical education (Spencer and Jordan 1999). This would help facilitate students' capacity to be lifelong learners and nurture the development of the 'individual knowing'⁶⁸ associated with professional artistry (Beeston and Higgs 2001).

The increasing emphasis on shared-decision making challenges the traditional practitioner-centred approaches of osteopathy which focus on practitioners' hands-on skills combined with their knowledge and decision-making. There is an increasing movement towards practice which emphasises patient education and communication in order to facilitate self-management and enhance self-efficacy, in addition to reducing pain and improving physical function. However, practitioner-centred and paternalistic approaches are unlikely to benefit patients in this holistic way. The undergraduate osteopathic curricula need to be developed to reflect this shift in healthcare focus. Approaches to decision making which are shared and patient-led, need to be explicit and incorporated into osteopathic undergraduate education, so that students can develop their own decision-making capabilities which are patient-centred. Clinical tutors need to develop these skills with students in clinical settings, in addition to developing hands-on treatment and examination skills. Failure to meet patient demands and expectations may result in a lack of ability to compete in the current landscape and culture of modern

⁶⁸ *Individual knowing* is knowledge developed by experience in the field and contextualised within a framework of propositional and professional knowledge (Beeston and Higgs 2001).

healthcare which promotes higher levels of patient involvement in the decision-making process (Department of Health 2012).

The findings also have implications for CPD. Current CPD⁶⁹ may focus too heavily on the acquisition of technical skills (for example, advanced hands-on skills, additional treatment modalities), which are conducted away from practice. A diet predominantly of didactic, teacher-centred undergraduate learning combined with skill-focused CPD courses away from practice will likely result in a conception of practice which emphasises technical rationality. In addition, short CPD courses may not foster and promote critically reflective practice, which may result in practitioners focusing their CPD activity on acquiring new technical skills (or improving existing technical skills) rather than developing reasoning and reflexivity skills. CPD should enable practitioners to learn from practice and increase their capacity to synthesise, blend and critically evaluate different sources of knowledge, including research evidence, so that they move towards professional artistry and expertise. As an alternative to short courses and CPD training, peer observation of practice (Petty and Morley 2009) may help practitioners to learn from and in practice. Senior practitioners also have a responsibility to foster the reflexivity and criticality of novice and junior osteopaths in the workplace. Senior practitioners should guide novices, and encourage self-reflection and critical appraisal in the clinical workplace. With many practitioners working alone, and the absence of a formal, professional hierarchy in osteopathy, implementing work-based peer observations may be challenging. However, regional interest groups, journal clubs and research hubs may offer such an opportunity.

This study found no relationship between conception of practice and clinical experience and supports the literature on expertise (Eraut 1994; Resnik and Hart 2003) which suggests that clinical experience and patient ‘mileage’ (Richardson 1999b) alone are insufficient to move a practitioner towards professional artistry and develop expertise. Therefore, it cannot be left to chance that practitioners will develop expertise and artistry, based on experience alone.

⁶⁹ The CPD issue is timely as currently there is an on-going consultation, regarding its future structure and purpose, commissioned by the GOsC (as part of the revalidation process) (General Osteopathic Council 2009b).

Finally, the finding that some clinic tutors conceive practice as technical rationality is also a significant concern. Clinic tutors should have their learning facilitated so that they can critically examine practice knowledge and practice traditions. Workshops for existing clinical tutors could be delivered in-house by OEIs to raise the tutor's awareness of their reasoning, practice and knowledge. Failure to do this will result in tutors nurturing a culture of un-criticality and an adherence to dated practice traditions.

8.7 Implications for research

This study provided a theoretical insight into the clinical decision-making and therapeutic approaches of experienced osteopaths in the UK, which were strongly influenced by participants' conception of practice. This is the first research of its kind in osteopathy, and the extensive findings generated indicate that there are a number of key areas of osteopathic clinical decision-making and practice which warrant further exploration.

The findings highlighted variation in the nature of practitioner-patient interaction from the perspective of the practitioner. Further research should be carried out to investigate these differences from the perspectives of patients, such as their expectations of perceptions of these different forms of interaction in relation to clinical practices. This would develop further knowledge of the complex practitioner-patient interaction which takes place during practice, and how this influences areas of practice such as the nature and development of the therapeutic relationship.

The findings from this study were constructed from a sample of privately practicing osteopaths in the UK, and further research is necessary to establish how far the substantive theory can 'reach' to the different corners of the osteopathic profession and also to other manual therapy professions such as physiotherapy and chiropractic. Further research employing focus groups could be carried out to explore the transferability of the substantive theory to osteopaths in other countries or practitioners that work in other clinical settings, such as the NHS or as part of other manual therapy professions.

The finding that there was variation in the therapeutic approaches of experienced practitioners necessitates further research. Longitudinal studies could be carried out to

explore how these views of osteopathy and therapeutic approaches develop in final year students, on the edge of working life (Lindquist et al. 2006; Lindquist et al. 2010) and through the course of their professional careers. Research of this kind would help develop an understanding of how osteopathic students and practitioners develop their professional identities and therapeutic approaches, and how these might change throughout the course of their osteopathic lives. This may generate further knowledge of the factors that influence an individual's conception of practice and build upon the findings of this research.

The finding that there is variation in the level of patient involvement in clinical decision-making has implications for further research. While patient participation and involvement in decision-making is considered valuable to both patients and osteopaths (Leach et al. 2011), there may be a number of barriers which could challenge its incorporation into osteopathic practice and education. These barriers may include: a lack of knowledge and skills related to self-management and educational strategies, in both practitioners (Lamiani and Furey 2009) and in patients (Cooper et al. 2009), varying attitudes of patients and practitioners towards higher levels of patient involvement (Schoeb and Bürge 2012), power inequalities in the patient-practitioner relationship (Malterud 2010; Schoeb and Bürge 2012) and differences in how patients and practitioners conceptualise aspects of self-management such as 'involvement' (Entwistle and Watt 2006) and 'empowerment' (Ramsay Wan et al. 2012). Further research could be carried out in osteopathy, to investigate how patients and practitioners conceptualise participation, and their perceptions and expectations of their involvement in clinical decision-making. Traditionally, the osteopathic profession has relied upon treatment models which emphasise the skills and knowledge of practitioners to 'find and fix' the patient's problem. Research could be carried out to investigate whether practitioners are appropriately skilled to incorporate shared decision-making approaches in their practice.

The findings from this research suggest that expertise in osteopathy is associated with a professional artistic conception of practice. Research could be carried out to further develop knowledge of the nature of osteopathic expertise. One of the major goals of practice progression is the development of professional artistry (Higgs and Titchen 2001b) and research is required to investigate further what artistry is and how to acquire

it in the context of osteopathy. A number of healthcare professions have investigated the impact of pre-registration and postgraduate Master's education programmes on the practice of individual practitioners (Alsop and Lloyd 2002; Stathopoulos and Harrison 2003; Spencer 2006; Green et al. 2008; Park et al. 2011; Petty et al. 2011a, 2011b), providing an insight into how novices can attain and develop expertise. Similar research could investigate the learning transitions from the perspective of individual osteopaths enrolled in postgraduate osteopathic Master's programmes. Research of this type could explore the attributes and nature of osteopathic expertise and develop knowledge of the transition towards professional artistry. In light of some osteopathic institutions currently offering postgraduate Master's and Doctoral degrees in osteopathy (for example, British College of Osteopathic Medicine 2013b; British School of Osteopathy 2013; College of Osteopaths 2013), research of this type could help further develop the postgraduate curriculum and facilitate its planning and delivery.

The literature indicates the complexity and multi-dimensionality of expertise, professional artistry and judgement (Paterson et al. 2005, 2006; Paterson et al. 2008). Other methods of data collection could be employed to further investigate the professional artistry and clinical decision-making in relation to osteopaths. For example, simulation of clinical situations using actors as patients could be combined with video-recording and a reflective interview with the practitioners afterwards. This would allow researchers to tailor the environment to involve a particularly complex or uncertain clinical situation and collect data on decision-making under stress and uncertainty (for example, Scholes et al. 2012). Research of this sort would provide specific knowledge of the clinical decision-making skills of novice and experienced osteopaths.

The sample of participants in this research were chosen as their level of experience and educational background made them good informants (Morse 1991) and, as the first study of its kind in osteopathy, their perspectives provided a rich insight into their clinical decision-making and practice approaches. Further research could be carried out to explore the clinical decision-making of novice practitioners and their approaches to practice. This would highlight novice-practice differences and strengthen the theory further.

Research into osteopathic training processes could explore how undergraduate courses prepare students for the development of expertise and professional artistry. A curriculum analysis could be performed to investigate how educational programmes are organised and delivered, and the way in which clinical reasoning is taught and how it is perceived by students (Cruz 2010; Cruz et al. 2012b). This research would develop knowledge of the kind of clinical reasoning and practice approaches being promoted in UK OEIs. Educational research could also explore the educational models used in undergraduate OEIs and to what extent they encourage active student involvement in learning.

Finally, further research could investigate the influence that the different therapeutic approaches (together with the associated approaches to clinical decision-making, levels of patient involvement and therapeutic goals) have on clinical outcomes, and how they relate to clinical guidelines on common and professionally relevant conditions, such as chronic low back pain (Pincus et al. 2007). The attitudes and beliefs held by practitioners regarding specific components of patient care, such as effective reassurance, self-management, return to work, and the provision of hands-on treatment in the short term, may all impact on patients' health outcomes with chronic musculoskeletal pain (Pincus et al. 2007; Carnes et al. 2012). These components could be investigated in relation to the therapeutic and decision-making approaches identified in this research with the potential to enhance the clinical effectiveness of osteopathic care.

8.8 Thesis limitations

Whilst this research has produced knowledge of the clinical decision-making and therapeutic approaches of the experienced osteopaths in this study, a number of limitations to the thesis need to be highlighted. These are discussed below.

The limited number of perspectives from a limited number of individuals⁷⁰ means that transferability of the findings to the wider osteopathic and manual therapy professions

⁷⁰ During recruitment for study participants (Section 6.2) clinical tutors from all nine OEIs were invited to take part in the study. However, only practitioners who had graduated from three of the nine OEIs (BCOM, BSO and ESO) volunteered to participate in this study. Practitioners from the remaining six

needs to be established through further research. Furthermore, this research did not include osteopaths working within the NHS, as these practitioners represent a small fraction of the profession (General Osteopathic Council 2012d), and it was anticipated that as a result of working within such a large and complex organisation as the NHS, they would have adopted quite different models of practice (Foster et al. 1999; Pincus et al. 2006). However, recent qualitative research (Bradbury et al. 2013) indicates that there is consistency in patients' experiences of private and public (NHS) osteopathic services, suggesting that the differences may be less significant than initially thought. It also implies that aspects of the substantive theory may transfer to practitioners working within a NHS setting. Nonetheless, this study aimed to understand clinical decision-making and therapeutic approaches of experienced osteopaths, and is consistent with the chosen qualitative methodology which sought to understand social phenomena in the natural setting, from the perspectives of the participants (Guba and Lincoln 1994). The aim of this qualitative study was to develop a deeper and *contextual understanding* of the clinical decision-making processes and therapeutic approaches from the perspectives of practitioners, and not to measure and record these aspects of practice, in order to make profession-wide generalisations.

Another limitation relates to the data collection methods used in this study. Interviewing was chosen as it was congruent with my subjectivist epistemological position, and it enabled participants to deeply reflect on their practices and reasoning. However, participants may have modified their answers in order to please me and appear in a positive light (Holloway and Wheeler 2002). Being aware of this possibility during interviews enabled me to monitor and minimise the 'interview effect' by probing more deeply into participants' responses. Furthermore, using video as a reflective tool in combination with interviews, helped to strengthen the findings of this research, by enabling participants to articulate the connection between their knowledge, reasoning and action (Haw and Hadfield 2011).

My skills and expertise as a qualitative researcher using grounded theory were also a limitation of this study. While immersing myself in the grounded theory literature and

OEs did not come forward to participate. However, BCOM, BSO and ESO are amongst the most established and largest OEs in the UK, which suggests that this may not significantly limit the transferability of the findings to the wider profession.

attending workshops helped me to feel confident that I understood what the method was ‘all about’ such as its purposes, components and procedures, picturing how these processes would play out in the field was more challenging. Also, during analysis I grappled with ‘seeing the bigger picture’ so that codes and categories were sufficiently abstract. An extensive period of data collection and analysis in combination with consulting the literature triggered analytical insights and enabled me to view the data from alternative perspectives. Finally, a record of the specific literature search strategies employed at the start of this study for the literature review chapter was not kept. Providing a clear account of how the literature was initially sourced would provide greater assurance that the review was comprehensive.

8.9 Contribution to knowledge

This research explored the nature of clinical decision-making and therapeutic approaches of experienced osteopaths. This area of research enabled a deeper exploration of how practitioners view osteopathy and how they conceive their practice. A number of models of clinical reasoning and expertise have been developed through research by a range of healthcare professions (Fleming 1991a, 1991b; Jensen et al. 2000; Edwards et al. 2004a), and while the findings resonate to some degree with this literature there are some differences, which have been highlighted. The substantive theory developed from this study provides the first research-based model of clinical decision-making and therapeutic approaches in osteopathy (illustrated earlier in Figure 7.4, Chapter 7), and therefore makes a significant and original contribution to the osteopathic knowledge base. The findings from this study suggest that experienced practitioners have different therapeutic approaches, which are associated with variations in the nature and focus of their patient interaction, their view of osteopathy, their approach to clinical decision-making and their therapeutic goal. The findings also suggest that a major factor behind individual practitioners’ therapeutic approach is their conception of practice, which lies on a continuum between technical rationality and professional artistry. A conception of practice akin to technical rationality was associated with a Treater therapeutic approach, practitioner-led clinical decision-making and a low level of patient involvement. Practitioners with a conception of practice akin to professional artistry adopted either Communicator or Educator therapeutic approaches. These latter two approaches were associated with a greater degree of

patient involvement, and in this respect, Communicators and Educators emphasised shared and patient-led clinical decision-making approaches respectively.

This study found that experienced osteopaths adopt hypothetico-deductive and pattern recognition approaches to diagnostic reasoning. Although similar models of diagnostic reasoning have been proposed theoretically in the osteopathic literature (Smith 1971b, 1971a; Sprafka 2003), this study was the first to provide research-based knowledge of these aspects of osteopathic clinical decision-making, and provides an original contribution to the knowledge base of the profession.

With regard to the methodology and methods adopted in this research, this thesis provides a number of original contributions. This study was amongst the first in osteopathy to employ constructivist grounded theory. In providing an audit trail of how the major processes and procedures of grounded theory (Charmaz 2006) were employed in this study, and detailing how these practices resulted in the development of the substantive theory (Chapter 6), this thesis makes an original methodological contribution to the research base in osteopathy. Finally, the combination of individual interviews, non-participant observation, video-recording and video-prompted reflective interviews employed in this study, constitutes a novel method of data collection, in the context of osteopathy and osteopathic research.

8.10 Conclusions

The healthcare landscape has undergone considerable change since the beginnings of osteopathy in the UK in the early 1900s. There are a number of forces at work which have, and will continue to impact the osteopathic profession. The rise and dominance of evidence-informed practice, patient-centred care and reflective practice models demands that the profession explore the practice and clinical decision-making of its members so that a robust and comprehensive professional knowledge base can be developed, and patient care enhanced. Furthermore, the provision of musculoskeletal manual therapy is growing ever more competitive. Developing an understanding of how practitioners view practice and use knowledge will help enhance and optimise patient care and treatment outcomes, and enable the osteopathic profession to be included in future healthcare policy.

This thesis details the construction of the first substantive theory of the clinical decision-making and therapeutic approaches of osteopaths. The findings from this grounded theory study offer a number of theoretical insights into the clinical decision-making and therapeutic approaches of experienced osteopaths, and the relationship between these insights constitutes the substantive grounded theory.

Experienced osteopaths in this study adopted a variety of therapeutic approaches in their practice. An individual practitioners' therapeutic approach influences their interaction with patients, their clinical decision-making, the level of patient involvement and their therapeutic goal. How participants viewed the nature of their practice formed their overarching conception of practice. Participants' therapeutic approaches flowed from how they conceived their practice, and their conception of practice was identified as the key factor which determined their therapeutic approach and clinical decision-making. Participants' conception of practice lay on a continuum ranging from technical rationality to professional artistry. A number of influencing factors were identified which contributed to practitioners' conception of practice and help explain their therapeutic approach and clinical decision-making. These were: educational experience, view of health and disease, epistemology of practice knowledge, theory-practice relationship, and participants' perceived therapeutic role. This theoretical explanation of osteopaths' therapeutic approaches and clinical decision-making offers an original and significant contribution to the knowledge base of osteopathy.

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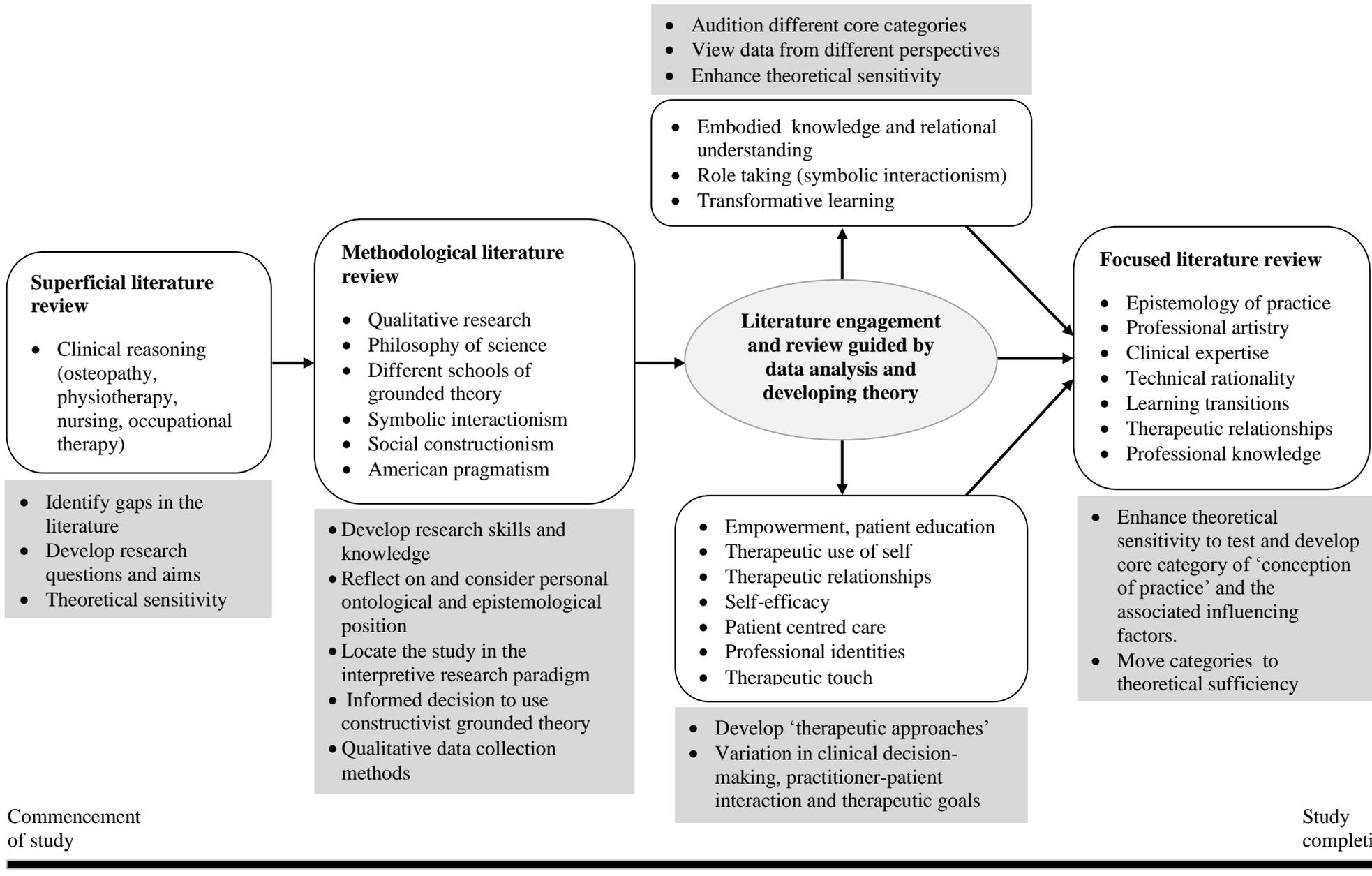
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Appendices



Appendix 2- Follow-up letter to clinic managers of OEIs- Individual interviews

Dear ...

Following my phone call today, I will clarify who I am, my purpose etc.

I am an osteopath and PhD student at the University of Brighton. I am conducting research in to the clinical reasoning of osteopaths in the UK. Part of my research will involve interviewing osteopaths, to discuss aspects of their decision-making in clinical practice. Initially clinic tutors, who are also in private practice, will be invited to participate, and this is the purpose of my e mail. I am approaching all osteopathic colleges in the UK to invite clinic tutors to participate in this research.

The study has been approved by the ethics committee at the University of Brighton and the ethics committee at BCOM. I have attached the ethical approval letters for your records. I have also attached a poster which to be displayed in the clinic staff area. I would be very grateful if you could inform all clinic tutors of my study and that if they are interested in participating or would like to know more about the study they should contact me on the details provided on the poster.

Thank you for your support, please do not hesitate to contact me for further information,
Kind regards

Oliver Thomson BSc(Hons)Ost.Med, D.O, MSc
Research Student
Tel.
Email.
Clinical Research Centre for Health Professions
University of Brighton
Darley Road, Eastbourne
BN20 7UR

Appendix 3- Recruitment poster for individual interviews, placed within OElS

University of Brighton



Exploring Clinical Reasoning in Osteopathy

As part of a doctoral thesis under the supervision of the University of Brighton, I am exploring the nature of clinical reasoning in osteopathy.

Using semi structured interviews with practitioners; I hope to gain an insight into the clinical reasoning processes of osteopaths. Our previous research has identified key aspects of osteopathic clinical reasoning and we would like to explore these issues further.

Participation in the study would involve taking part in a focus group interview at The British College of Osteopathic Medicine, at a mutually convenient date and time. The interview will last no longer than 2 hours. At this stage, we would like to hear from practitioners who would be happy to discuss aspects of their decision making in practice with other members of the profession.

If you are interested in taking part and would like more information on the study, please do not hesitate to contact Oliver Thomson or email

Appendix 4- Participant biographical form

University of Brighton

Clinical reasoning research

Participant details

Name

Date of birth

Year of qualifying as an osteopath

Osteopathic educational institution which you graduated from

Current clinical/practice posts held (including days per week)

Current teaching positions (clinical/academic, please include days per week)

Osteopathic qualifications

Other qualifications (other degrees, postgraduate courses, diplomas)

Particular philosophy of treatment - There may be a particular approach/interest in the diagnosis/treatment/management of patients which has influenced you significantly (e.g. Structural/ biomechanical, Cranial, Visceral, Classical, Exercise/Rehabilitation, Nutritional/Naturopathic), please provide some details.

Appendix 5- Introductory letter to participants

Clinical Research Centre For Health Professions

University of Brighton

Oliver Thomson

MSc, BSc(Hons) Ost.Med, D.O

Aldro Building

49 Darley Road

Eastbourne BN20 7UR

Telephone

email:

Invitation to participate

Date.....

Dear.....

Participation in a Research Study: Clinical reasoning in osteopathy

Thank you for considering participating in this study which aims to examine the clinical reasoning of osteopaths. A number of osteopaths throughout the UK, from different practice backgrounds are being invited to participate. Your details have been provided by your clinical supervisor at the osteopathic college at which you currently work.

You are invited to participate in this study because of your recognised expertise in osteopathy. The information gained from the study will contribute to the developing body of knowledge concerning osteopathic practice, and in particular, the means by which osteopaths make decisions in clinical practice.

Before you make a decision on whether or not to take part, it is important for you to understand why the research is being done and exactly what it will involve. The attached information sheet provides further details about the study. I would be grateful if you can take some time to decide whether or not you wish to take part by reading this. If you choose to take part, please contact me on the details below.

Thank you in advance for taking the time to read this. If you have any questions, please feel free to contact me, or a member of my supervisory team, whose details are listed on the information sheet.

Yours sincerely,

Oliver Thomson

Appendix 6- Participant information sheet- Individual interviews

UNIVERSITY OF BRIGHTON

Participant Information Sheet- Individual Interview

Title of study: Clinical Reasoning in Osteopathy

Date:

I would like to invite you to take part in this research study, which is in part fulfilment of completing a Doctor of Philosophy award at the University of Brighton. The study aims to explore the clinical reasoning process of osteopaths. A number of osteopaths are being invited to participate in the study. You have been chosen because of your expertise in osteopathy.

The principal investigator is Mr Oliver Thomson, who is a lecturer and clinic tutor at the British College of Osteopathic Medicine (BCOM), and a research student at the School of Health Professions at the University of Brighton. The study is funded by BCOM, and no profit-making is involved, either to an institution or an individual. **If you choose to take part, you will be invited to participate in one interview for up to 1 hour, a day and time suitable for you. Some participants will be invited to participate in additional in depth interviews, lasting up to 1.5 hours.** The interview(s) will occur within a twelve month period from the date on this information sheet.

What is the purpose of the study?

The information gained from the study will contribute to the developing body of knowledge concerning osteopathic practice, and in particular, the means by which osteopaths make decisions in clinical practice. You may find reflecting on your clinical practice and clinical reasoning to be a useful experience, whilst your participation will also contribute to the evidence-base for osteopathic profession.

Why have I been selected?

You are invited to participate in this study because of your expertise in the field of osteopathy. Your details have been provided by the clinical supervisor of the osteopathic education institution at which you currently work.

What will it involve?

The study will involve you attending no more than three interviews, each lasting no longer than 1.5 hours in duration. You will be invited to participate in each interview. The interview will invite you to talk about a range of topics related to clinical reasoning. For example issues around how you think and make decisions during your examination and treatment of patients.

The interview(s) will be digitally recorded, and later the recording will be transcribed in full so that the recorded data can be analysed. I may also write notes throughout the interview to capture important points. You are free to refrain from answering any questions you choose. If during the interview, for whatever reason, you become distressed about the topic under discussion, you are free to pause or stop the interview at any time.

The identity of participants on audiotape will be masked. Any digitally recorded transcriptions will carry no label of identity but rather, be assigned an identification number known only to the researcher (O.T). This written material will, therefore, have no information which could lead to the identification of any participants (i.e. either patients or osteopaths). All personal information will remain strictly confidential.

I am aware that osteopaths practice in a variety of ways, it is therefore important to seek many different opinions from a range of osteopaths, and teaching staff at all of the osteopathic teaching institutions in the UK. It is important for you to know, that there are no right or wrong answers to the questions asked during the interview.

I will send you a transcript of the interview, either by post or email, (which is most convenient for you) for you to check for accuracy; any quotes that you are uncomfortable with or that threaten your anonymity will be deleted. A stamped addressed envelope will be enclosed, for the return of the transcript, if appropriate. You may be invited to comment on and discuss the conceptual findings at the end of the study.

Do I have to take part?

It is completely your decision as to whether you take part. If you require any further information, you can contact the main researcher (Oliver Thomson) using the contact details at the end of this document. If you decide to take part please would you read and sign the attached consent form and return in the enclosed stamped addressed envelope. If you do decide to take part you are free to withdraw at any time without giving a reason. At time of withdrawal, you will have the option to have the data so far collected from you also withdrawn from the study. **You may discuss, in confidence, any aspect of the study initially with Oliver, or subsequently with a member of the supervisory team, whose details are at the end of this document.**

Will my taking part in the study remain confidential?

The study has been approved by the Faculty of Health and Social Science Research Governance and Ethics Committee at the University of Brighton, and the Research Committee at BCOM. Any information obtained from the interviews may form part of reports and publications, all identifying information about you will be kept completely confidential to the researchers involved. A numerical coding system will be used for the data from the transcripts, ensuring the anonymity of individual participants, and no comments will be attributed to individuals in any way that would allow those individuals to be recognised. All of the data from the study in the form of transcriptions and digital recordings will remain confidential to the researcher and supervisory team, and will be stored in a locked filing cabinet within the main researcher's home. All electronic copies of the data will be password protected. Any data gathered will not be sent outside the European Economic Area, in line with the Data Protection Act 1998.

What will happen to the results from the study?

The researcher will keep all digital recordings and interview transcripts until the end of the research study. All identifiable digital recordings and data will be destroyed following successful completion of the PhD.

The data gathered from the interviews will be analysed by the researcher, in consultation with the supervisory team. Following data analysis, the researcher will work towards presenting the findings of this research to relevant osteopathic professional conferences and towards writing up the findings for publication in academic journals. Anonymous extracts from the interview transcriptions will be used as part of the presentation and publication of this work in relevant osteopathic professional journals and at osteopathic conferences. Individual participants will not be identified in any presentation, report or publication. All data gathered will be destroyed six years after completing of the study, and will be securely stored at the researcher's home

Oliver Thomson

The British College of Osteopathic Medicine
Lief House
Finchley Road
London NW3 5RR

email:

Tel.

Mobile.

Supervisory Team

In the first instance, please contact Professor Ann Moore

Professor Ann Moore
Director
Clinical Research Centre for Health Professions

Tel.:
email:

Dr Nikki Petty
Principal Lecturer
Clinical Research Centre for Health Professions

Tel.
email:

Both Ann and Nikki can be contacted at:

Aldro Building
University of Brighton
49, Darley Road
Eastbourne
BN20 7UR

Dr Ian Drysdale
Principal
IPDrysdale@bcom.ac.uk
The British College of Osteopathic Medicine
Lief House
Finchley Road
London NW3 5RR

Tel.
email.

If you have any complaints regarding the study, please contact:

Dr Anne Mandy
Reader
Clinical Research Centre for Health Professions
Aldro Building
University of Brighton
49, Darley Road
Eastbourne
BN207UR

Tel.
email:

Appendix 7- Participant consent form- Individual interviews

UNIVERSITY OF BRIGHTON

Clinical reasoning in osteopathy

Participant Consent Form- Individual Interview

- I agree to take part in this research which is to explore the nature of clinical reasoning in osteopathy.
- The researcher has explained to my satisfaction the purpose of the study.
- I have had the principles and the procedure explained to me and I have also read the information sheet. I understand the principles and procedures fully.
- I am aware that I will be required to discuss my thinking and the decision-making that I use to determine my approach to the diagnosis, treatment and management of patients.
- I understand that any information will be seen only by the researchers and will not be revealed to anyone else.
- I understand that I am free to withdraw from the study at any time for any reason.

Name (please print).....

Signed.....

Date.....

Appendix 8- Follow-up letter to clinic managers of OEIs- non-participant clinical observations, video-recording and reflective interviews

Dear....

Many thanks for your assistance last year, in helping me recruit participants for my doctoral research into clinical reasoning. The analysis over the last year and a half has led to some very interesting findings.

The next stage of my research is to see my constructed theory 'in action' by way of video-recording osteopaths with their patients, followed by a retrospective interview (this will occur in their private practices). Clinic tutors, also in private practice are being invited to participate. I am asking all the OEIs, to inform their clinic managers/clinic coordinators to make clinical tutors aware of my project and display a poster with information about the study and my contact details.

Both the ethics committees at BCOM and the Faculty of Health and Social Science Research Ethics and Governance, at the University of Brighton have since approved the study.

I would be grateful if you could inform me whether you'd be happy to assist in this recruitment process, so that I may send you some recruitment material in the way of a recruitment advert/poster.

If you have any questions, do not hesitate to contact me.

Best wishes

Oliver Thomson MSc, BSc(Hons)Ost.Med, D.O

Doctoral Researcher

Tel.

Email.

Clinical Research Centre for Health Professions

University of Brighton

Darley Road

Eastbourne

BN20 7UR

Appendix 9- Recruitment advert for non-participant clinical observations, video-recording and reflective interviews, circulated to NCOR hubs, placed in national osteopathic press and OEIs

University of Brighton



Clinical Reasoning Research- Participants Needed

As part of a PhD research study, under the supervision of the University of Brighton, I am exploring the nature of clinical reasoning in osteopathy.

Our previous research has identified key aspects of osteopathic clinical reasoning and we would like to explore these issues further.

Participation in the study would involve the observation and video-recording (optional) of a patient consultation and treatment session and subsequent interview with the practitioner at a mutually convenient date and time.

Data collection for the study will occur between the periods of **January 2012-July 2012.**

If you are interested in taking part and would like more information on the study, please contact Oliver Thomson

email

Tel.

Appendix 10- Participant information sheet- Non-participant clinical observations, video-recording and reflective interviews

UNIVERSITY OF BRIGHTON

Participant (Osteopath) Information Sheet- Observation, Video-recording and Interview

Title of study: Clinical Reasoning in Osteopathy

Date:

I would like to invite you to take part in this research study, which is in part fulfilment of completing a Doctor of Philosophy award at the University of Brighton. The study aims to explore the clinical reasoning process of osteopaths. A number of osteopaths are being invited to participate in the study. You have been chosen because of your expertise in osteopathy. The principal investigator is Mr Oliver Thomson, who is an osteopath, and senior lecturer at Oxford Brookes University, and a PhD student at the School of Health Professions at the University of Brighton. No profit-making is involved, either to an institution or an individual.

What is the purpose of the study?

The information gained from the study will contribute to the developing body of knowledge concerning osteopathic practice, and in particular, the means by which osteopaths make decisions in clinical practice. You may find reflecting on your clinical practice and clinical reasoning to be a useful experience, whilst your participation will also contribute to the evidence-base for osteopathic profession.

Why have I been selected?

You are invited to participate in this study because of your expertise in the field of osteopathy. Your details have been provided by the clinical supervisor of the osteopathic education institution at which you currently work, or you belong to one of the National Council for Osteopathic Research hubs. Alternatively you may have contacted me directly following an advertisement in one of the osteopathic magazines.

What will it involve?

What is being asked of you, if you choose to take part, is that I will observe and video-record your clinical practice with a patient (either a returning patient or new consultation). Immediately after each clinical session you will be interviewed regarding your thoughts about your the reasons behind your questions, examination, treatment and

management procedures. The video-recording will be used to prompt your thinking about the session. The interviews will last no longer than one hour. The observation and interview will occur within a 6 month period from the date on this information sheet.

The interview with you after the session will be digitally recorded and transcribed in full so that the recorded data can be analysed. You are free to refrain from answering any questions you choose. If during the interview, for whatever reason, you become distressed about the topic under discussion, you are free to pause or stop the interview at any time.

The identity of all participants (patients and osteopaths) on audiotape will be masked. The transcriptions of the recorded interview will carry not carry any label of identity but rather, be assigned an identification code known only to the researcher (O.T). This written material will, therefore, have no information which could lead to the identification of any participants (i.e. either patients or osteopaths). All personal information will remain strictly confidential.

I am aware that osteopaths practice in a variety of ways, it is therefore important to seek many different opinions from a range of osteopaths around the U.K. It is important for you to know, that there are no right or wrong answers to the questions asked during the interview.

I will send you a transcript of the interview, either by post or email, (which is most convenient for you) for you to check for accuracy; any quotes that you are uncomfortable with or that threaten your anonymity will be deleted. A stamped addressed envelope will be enclosed, for the return of the transcript, if appropriate. You may be invited to comment on and discuss the conceptual findings at the end of the study.

Do I have to take part?

It is completely your decision as to whether you take part. If you require any further information, you can contact the main researcher (Oliver Thomson) using the contact details at the end of this document. If you decide to take part please would you read and sign the attached consent form and return in the enclosed stamped addressed envelope. If you do decide to take part you are free to withdraw at any time without giving a reason. At time of withdrawal, you will have the option to have the data so far collected from you also withdrawn from the study. You may discuss, in confidence, any aspect of the study initially with me or subsequently with a member of the supervisory team, whose details are at the end of this document.

Will my taking part in the study remain confidential?

The study has been approved by the Faculty of Health and Social Science Research Ethics and Governance Committee at the University of Brighton. Only the researcher and his supervisors will have access to the data. Information obtained from the video-

recording and interviews may form part of reports and publications, all identifying information about you and your patient will be kept completely confidential to the researchers involved. A numerical coding system will be used for the data from the transcripts, ensuring the anonymity of individual participants, and no comments will be attributed to individuals in any way that would allow those individuals to be recognised. All of the data from the study in the form of transcriptions and audio recordings will remain confidential to the researcher and supervisory team, and will be stored in a locked filing cabinet within the main researcher's home. All electronic copies of the data will be password protected. Any data gathered will not be sent outside the European Economic Area, in line with the Data Protection Act 1998. The video-recording will be stored securely in a password protected computer file, kept at the researcher's home address. At the completion of the PhD all copies of the video-recording will be permanently deleted.

In the case of unprofessional or dangerous behaviors (such as being seriously unsafe or unethical), disclosure of negligence or harm from the interview the researcher will then be required to break confidentiality and pass the information to the appropriate authority.

What will happen if I don't want to carry on with the study?

If you do not wish to carry on with the study you may withdraw at anytime without giving any reason. However, since interviewing, observing and analysing interview transcripts will occur concurrently, it may be impossible to disaggregate and remove the data which you had already contributed. If any data you have provided has not been analysed at the point of your decision to withdraw from the study, you may be asked whether the data collected from you can still be used, but you retain the right to decide whether that data can be used.

What will happen to the results from the study?

The researcher will keep all digital recordings and interview transcripts until the end of the research study. All identifiable digital recordings and data will be destroyed following successful completion of the PhD.

The data gathered from the observation and subsequent interviews will be analysed by the researcher, in consultation with the supervisory team. Following data analysis, the researcher will work towards presenting the findings of this research to relevant osteopathic professional conferences and towards writing up the findings for publication in academic journals. Anonymous extracts from the transcriptions will be used as part of the presentation and publication of this work in relevant osteopathic professional journals and at osteopathic conferences Individual participants will not be identified in any presentation, report or publication. All data gathered will be destroyed six years after completing of the study, and will be securely stored at the researcher's home

If you would like to discuss this study further, please do not hesitate to contact me.

Oliver Thomson

PhD Student

Clinical Research Centre for Health Professions

Aldro Building

University of Brighton

49, Darley Road

Eastbourne, BN20 7UR

email:O.Thomson@brighton.ac.uk

Tel. 07545392550

Supervisory Team

In the first instance, please contact Professor Ann Moore

Professor Ann Moore

Director

Clinical Research Centre for Health Professions

Tel.: 01273 643766

email: A.P.Moore@bton.ac.uk

Dr Nikki Petty

Principal Lecturer

Clinical Research Centre for Health Professions

Tel. 01273 641806

email: N.J.Petty@brighton.ac.uk

Both can be contacted at:

Aldro Building

University of Brighton

49, Darley Road

Eastbourne , BN20 7UR

If you have any complaints regarding the study, please contact:

Dr Anne Mandy

Reader

Clinical Research Centre for Health Professions

Aldro Building

University of Brighton

49, Darley Road

Eastbourne, BN207UR

Tel.

email:

Appendix 11- Participant consent form- Non-participant clinical observations, video-recording and reflective interviews

UNIVERSITY OF BRIGHTON

Clinical reasoning in osteopathy

Researcher Oliver Thomson

Participant (osteopath) Consent Form Observation, video-recording and interview

1	I agree to take part in the above study.	<input type="checkbox"/>
2	I confirm that I have read and understood the information sheet for the above study. The researcher has explained to my satisfaction the purpose, principles and procedures of the study and the possible risks involved.	<input type="checkbox"/>
3	I understand that I am free to withdraw from the study at any time without giving a reason and without incurring consequences from doing so.	<input type="checkbox"/>
4	I agree to be interviewed and to the interview being audio recorded.	<input type="checkbox"/>
5	I agree that the osteopathy session I give to a patient will be observed.	<input type="checkbox"/>
6	I agree that the osteopathy session will be video-recorded.	<input type="checkbox"/>
7	I understand how the data collected will be used, and that any confidential information will normally be seen only by the researchers and will not be revealed to anyone else.	<input type="checkbox"/>
8	I agree that should I withdraw from the study, the data collected up to that point may be used by the researcher for the purposes described in the information sheet.	<input type="checkbox"/>
9	I agree that anonymised quotes from interviews may be used in the thesis and any publications from this study.	<input type="checkbox"/>
10	I agree that in the case of unprofessional or dangerous behaviors, disclosure of negligence or harm from the interview the researcher will then be required to break confidentiality and pass the information to the appropriate authority. Such issues will be discussed with you prior to the appropriate action being taken.	<input type="checkbox"/>
11	I agree not to disclose any identifying information about my patients to anyone else other than the researcher during the reflective interview.	<input type="checkbox"/>
12	I agree not to identify patients participating in this research to anyone other than the researcher.	<input type="checkbox"/>

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

Appendix 12- Instructions for osteopaths when informing patients of observation and video-recording

Dear Participant

Now that you have agreed to participate, I'd like to provide you with some information in regards to how to go about informing and recruiting patients to be observed and video-recorded.

- When new patients contact the clinic to book an osteopathic appointment (either by phone or in person), their initial contact person (either clinic manager, receptionist or you) should inform them of the study (stressing that the osteopath is the focus of the observation and not them), offer them the 'information pack', containing the information sheet, a consent form and a participant contact form (these are all attached). This pack can be either posted or emailed depending on the preference of the patient. Patients must be allowed at least 2 days to read the information sheet before they decide. I am available to observe a new patient appointment on a Monday, Wednesday, Friday and weekends.
- All subsequent contact will be between myself and patients interested in participating. This is to ensure confidentiality. Patients interested in joining the study will be asked to contact me via phone or email if they have any concerns or questions regarding the study and their participation.
- Patients will be requested to contact me when they have decided to participate, and to bring their signed consent form with them to their appointment.
- It will be clearly explained to all patients that their treatment or care would not be compromised if they choose not to participate in the study.
- I would initially only observe/video-record one patient twice (their initial consultation then one follow-up appointment).
- You would need to allow time (about 60 minutes) after the appointment for us to review the video and have a discussion (this would be audio recorded).
- I will not be able to observe patients under the age of 16, with psychological/mental disability, or those who do not speak or understand English.

Appendix 13- Letter to participants when checking transcript

Dear Participant

Thanks so much for sharing your thoughts on your decision-making in osteopathic practice.

I have now transcribed the interview in full (attached), and would be grateful if you could:

- 1. Check the accuracy of the interview text**
- 2. Add any additional comments as you see appropriate**
- 3. Check whether you want any of the text removed**
- 4. Check that there is no information that might threaten your anonymity**

You will see I have not transcribed some names or details as this may compromise your anonymity. This is the only time the text will appear as a full transcription. The next stage is to analyse the interview data which will commence **once I have received clearance from you**. In the case of the PhD thesis, published research papers or conference presentations, only specifically selected quotes will be used. Every effort will be made to ensure your anonymity in maintained at all times.

I would be very grateful if you would read and comment (if so desired) on the transcript (if you are using Microsoft word, the 'track changes' option should make this easier) and return it to me via email.

Any thoughts and comments you may have are important in ensuring the interview data is trustworthy, and has represented what was said. **If I do not hear from you, I will assume that you are happy for me to proceed to use the information in my study.**

Thank you once more for your assistance with this study and for your valuable time.

Yours sincerely

Oliver Thomson BSc(Hons)Ost.Med, D.O, MSc

Research Student

Tel.

Email.

Clinical Research Centre for Health Professions

University of Brighton

Eastbourne, BN20 7UR

Appendix 14 - Faculty of Health and Social Science Research Ethics and Governance Committee, University of Brighton Ethics Committee Approval- Individual interviews

Decision Letter (FREGC-10-011.R2)

From: J.Scholes@brighton.ac.uk
To: OLIVER.THOMSON@HOTMAIL.COM
CC:
Subject: Faculty of Health and Social Science Research Ethics and Governance Committee - Decision on Manuscript ID FREGC-10-011.R2
Body: @@date to be populated upon sending@@

Dear Mr. THOMSON:

It is a pleasure to confirm approval of your application entitled "Clinical Reasoning in Osteopathy". The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Sincerely,
Prof. Julie Scholes
Editor-in-Chief, Faculty of Health and Social Science Research Ethics and Governance Committee
J.Scholes@brighton.ac.uk

Reviewer(s)' Comments to Author:

Reviewer: 3

Comments to the Applicant

Thank you for making these changes. In future, please can you respond in separate covering letter identifying the amendments you have made in response to the feedback from a review. This helps to speed up the response.

I am pleased to give Chair's approval to the changes.

Date Sent: 04-Aug-2010

Appendix 15- British College of Osteopathic Medicine Ethics Committee Approval- Individual interviews

Sent: 20 September 2010 11:48

From: Dr Simon Dyall

Subject: ethical approval



Dear Oliver,

Please be advised that BCOM Research Ethics Committee has approved your application for ethical approval.

Good luck with your research project.

Kind regards,

Dr Simon Dyall

Head of Academic Studies

The British College of Osteopathic Medicine

**Appendix 16- Faculty of Health and Social Science Research
Ethics and Governance Committee, University of Brighton
Ethics Committee Approval- Non-participant clinical
observations, video-recording and reflective interviews**

Decision Letter (FREGC-11-055.R1)

From: J.Scholes@brighton.ac.uk
To: OLIVER.THOMSON@HOTMAIL.COM
CC:
Subject: Faculty of Health and Social Science Research Ethics and Governance
Committee - Decision on Manuscript ID FREGC-11-055.R1
Body: @@date to be populated upon sending@@

Dear Mr. THOMSON:

It is a pleasure to approve your application entitled "Clinical Reasoning In Osteopathy". The comments of the reviewer are included at the foot of this letter. These comments may be useful to develop the research as it is undertaken - they do not raise any issues that should delay approval.

I wish you well with your study. Please notify the Committee of any changes to the design of the study and of any adverse incidents.

Sincerely,

Prof. Julie Scholes

Chair, Faculty of Health and Social Science Research Ethics and
Governance Committee

J.Scholes@brighton.ac.uk

Date Sent: 04-Nov-2011

Appendix 17- British College of Osteopathic Medicine ethical approval- Non-participant clinical observations, video-recording and reflective interviews

From: MHines@

To: oliver.thomson

Date: Wed, 16 Nov 2011 14:12:01 +0000

Subject: Ethical approval



Please see below as approval from BCOM ethics to proceed with your project.

Mark Hines

Exercise and Human Physiology Lecturer

British College of Osteopathic Medicine

Lief House, 120-122 Finchley Road

London, NW3 5HR

Email:

Tel:

Fax:

Appendix 18- Patient consent form- Non-participant clinical observations and video-recording

UNIVERSITY OF BRIGHTON

Patient consent form for observation and video-recording

Researcher: Oliver Thomson

Title of study: Clinical Reasoning in Osteopathy

1	I agree to take part in the above study.	<input type="checkbox"/>
2	I confirm that I have read and understood the information sheet for the above study. The researcher has explained to my satisfaction the purpose, principles and procedures of the study and the possible risks involved.	<input type="checkbox"/>
3	I understand that I am free to withdraw from the study at any time without giving a reason and without incurring consequences from doing so.	<input type="checkbox"/>
4	I agree that the osteopathy session I receive will be observed.	<input type="checkbox"/>
5	I agree that the osteopathy session will be video-recorded.	<input type="checkbox"/>
6	I understand how the data collected will be used, and that any confidential information will normally be seen only by the researchers and will not be revealed to anyone else.	<input type="checkbox"/>
7	I agree that should I withdraw from the study, the data collected up to that point may be used by the researcher for the purposes described in the information sheet.	<input type="checkbox"/>
8	I agree that anonymised quotes from interviews may be used in the thesis and any publications from this study.	<input type="checkbox"/>
9	I agree that in the case of unprofessional or dangerous behaviors, disclosure of negligence or harm from the interview the researcher will then be required to break confidentiality and pass the information to the appropriate authority.	<input type="checkbox"/>

Name of Patient

Date

Signature

Name of Researcher

Date

Signature

Appendix 19- Patient information sheet- Non-participant clinical observations and video-recording

UNIVERSITY OF BRIGHTON

Participant (Patient) Information Sheet- Observation and Video-recording of osteopathic session

Title of study: Clinical Reasoning in Osteopathy

Date:

Purpose and Background

The osteopath working with you is a participant in a study investigating clinical reasoning, or decision making. We hope to learn more about how osteopaths make decisions with their patients during the examination and treatment procedures. Oliver Thomson is conducting this study in partial fulfilment of the requirements for a PhD Degree.

What will it involve?

As a patient of this osteopath, your permission is being sought in order to observe this osteopath while he/she works with you during your appointment. No extra time will be added onto your appointment, so you should experience little or no disruption to your session. The focus of this observation is on the osteopath, who will be interviewed about his/her decision-making after this your appointment.

Nothing about your personal identity or medical condition will be included as data in this research. All details of you undergoing treatment will be kept strictly confidential. All that is required of you is that your consultation or treatment session with your osteopath be observed by the researcher, Oliver Thomson, who is also an osteopath.

All that is required from you is that the researcher observes and video-records two appointments with your osteopath (one initial consultation and one follow-up appointment), both occurring within a period of up to three months of each other.

Risks/Discomforts

It is not anticipated that your participation will put you at risk in any way, as all possible measures will be taken to conceal individual identities in any reporting of data collected. If at any time you wish to discontinue with the observation session, you are free to do so without any negative impact on you or your relationship with your osteopath.

Benefits

There may be no direct benefit to you from participating in this study. However, the information the study provides may help educators of osteopaths to better understand the nature of osteopathic clinical reasoning.

Confidentiality

Any information that is obtained in connection with this study and that can be identified with you will remain **confidential** and will be disclosed only with your permission. All personally identifying details of you and of the clinical site will be omitted or altered in the reported data so as to completely conceal your identity and that of the clinic in the reporting of the data. Only the researcher and his supervisors will have access to the data. The video-recording will be destroyed directly after the reflective interview with the osteopath. The audio-recording of the interview with the osteopath will be stored securely in a password protected computer file, kept at the researcher's home address. At the completion of the PhD all copies of the audio-recording will be permanently deleted.

In the case of unprofessional or dangerous behaviors, disclosure of negligence or harm from the observation the researcher will seek advice and may be required to break confidentiality and pass the information to the appropriate authority (such as the police, General Osteopathic Council).

Consent

PARTICIPATION IN RESEARCH IS VOLUNTARY. Your decision whether or not to allow the osteopath working with you to be video-recorded by Oliver Thomson will in no way affect your future relationship with anyone involved in your osteopathic care. If you decide to allow the video-recording of your session, you are free to discontinue participation at any time without risk of a penalty of any sort.

What will happen if I don't want to carry on with the study?

If you do not wish to carry on with the study you may withdraw at anytime without giving any reason. However, since interviewing, observing and analysing interview transcripts will occur concurrently, it may be impossible to disaggregate and remove the data which you had already contributed. If any data you have provided has not been analysed at the point of your decision to withdraw from the study, you may be asked whether the data collected from you can still be used, but you retain the right to decide whether that data can be used.

Please contact me on the details below if you choose to participate or if you have questions,

Oliver Thomson

The University of Brighton
Aldro Building
49, Darley Road
Eastbourne, BN20 7UR

E-mail:
Mobile.

Appendix 20- Patient contact form

UNIVERSITY OF BRIGHTON

Clinical reasoning research

Patient Contact Form

Name: _____

Preferred Method of contact (please choose one or more and provide details for appropriate methods)

Address:

Landline number: _____

Mobile number: _____

Email: _____

Please specify the most appropriate time to contact you.

Appendix 21- Early diagrammatic model

