Physiotherapists' participation in the McKenzie Institute Musculoskeletal Mechanical Diagnosis and Therapy diploma programme: A Qualitative Descriptive Inquiry.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material to a substantial extent which has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Margaret Campbell

Signed:

Dated: 14 April, 2018

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Abstract

Increasingly healthcare providers including physiotherapists have been expected by their professional and regulatory bodies to undertake continual learning to develop both clinically and professionally. Additionally, in response to changing health provision landscapes, within the allied health sector, there has been greater emphasis on promotion of autonomous practice with the opportunity for expansion of physiotherapists' scope of practice. Musculoskeletal physiotherapists, through extended, advanced and specialist roles, have worked toward achieving recognition as musculoskeletal primary care providers of choice. Participation in postgraduate study has been indicated by physiotherapy governing bodies as an essential requirement for progression into these extended physiotherapy roles. An area of emerging research in musculoskeletal physiotherapy is exploration into existing models of postgraduate education. The McKenzie Institute is one group that provides postgraduate education and continued professional development for musculoskeletal practice. The McKenzie Institute's education framework involves completion of sequential competency programmes in Mechanical Diagnosis and Therapy (MDT). The highest competency level is attainment of the Diploma in MDT.

Although Mechanical Diagnosis and Therapy has been extensively researched in terms of reliability, efficacy and patient outcomes, to date there are no known studies that have focused on the McKenzie Institute's education programmes. This inquiry aimed to explore physiotherapists' perspectives on the experience of undertaking and successfully completing the McKenzie Institute diploma programme. An exploratory qualitative descriptive approach was utilised. Semi-structured interviews were conducted with nineteen MDT Diploma graduates. These were audiotaped and then transcribed. A foundational thematic analysis approach was used to analyse the data.

Three overarching themes emerged from the data. (1) "Trust and hope in the system" – Trust was articulated in the belief of MDT. Participants viewed the MDT system as an assured learning continuum and anticipated that participating further in the continuum would progress them. Hope in the system signified the desired consequences or outcomes that participation in

the MDT diploma programme might bring. Being a better clinician, credibility and the possibility of becoming an educator were highlighted as the central aspirations to be gained by placing trust and hope in the system. (2) “Learning to fully trust the system” – Described the participants learning journey. This encompassed their challenges, development and evolution through the systems learning continuum which brought about the expansion of practice insight and facilitated ongoing practice transformation. (3) “Beyond the system” – represents what “learning to trust the system” has brought to participants following completion of the MDT diploma programme. Participation became a driver for change and development both beyond the mechanical and beyond being a clinician. Additionally, it made participants feel more legitimised in the MDT community of practice, while also exposing them to new and broader communities of practice beyond MDT.

Findings may enhance the experience of future MDT learners considering undertaking the diploma programme. Additionally, it may help inform the McKenzie Institute how to sustain trust and hope in the system, as well as consider strategies for enhancing the Institute’s ongoing education and organisational endeavours. More broadly the findings may also prove meaningful or useful to other groups involved in developing and delivering similar postgraduate education programmes.

Chapter One: Introduction

Increasingly healthcare providers including physiotherapists have been expected to undertake continual learning to develop both clinically and professionally. Additionally, within the last decade, physiotherapists' have had a professional obligation to fulfil mandatory regulatory requirements by "engaging in continual professional activities which have the potential to influence and enhance physiotherapy practice" for recertification (Physiotherapy Board of New Zealand (PBNZ), 2009). Furthermore, in response to changing health provision landscapes, within the allied health sector, there has been greater emphasis on promotion of autonomous practice with the opportunity for expansion of physiotherapists' scope of practice (Chartered Society of Physiotherapists (CSP), 2015). Musculoskeletal physiotherapists, through extended, advanced and specialist roles, have worked towards achieving recognition as musculoskeletal primary care providers of choice (Rodeghero et al., 2015). Participation in postgraduate study has been indicated by physiotherapy governing bodies (Physiotherapy Board of Australia (PBA) 2015; CSP, 2015; PBNZ, 2017) as an essential requirement for progression into these types of extended physiotherapy roles.

The McKenzie Institute International (MII) is one group that provides postgraduate education and continued professional development for musculoskeletal physiotherapy practice. It functions to provide education, training, and support to clinicians in the principles of the Mechanical Diagnosis and Therapy (MDT) management approach (McKenzie & May, 2003). The education framework developed by the McKenzie Institute consists of staged levels of learning and competency, the highest of which is the Diploma in MDT. Their vision is that "Mechanical Diagnosis and Therapy (MDT) be the first choice worldwide for the assessment, treatment, education, and empowerment of patients with musculoskeletal disorders" (McKenzie Institute International (MII), 2017).

Qualitative research regarding musculoskeletal physiotherapy postgraduate education has looked to understand this advanced level of study by seeking information from participants (e.g., Constantine & Carpenter, 2012; Green, Perry & Harrison, 2008; Glover and Howden, 2009; Perry, Green & Harrison, 2011; Petty, Scholes & Ellis, 2011; Rushton and Lindsay, 2010;

Stathopoulos & Harrison, 2003). The uniting premise of this prior research has been to further inform potential candidates, employers, educators, developers of education programmes and the musculoskeletal physiotherapy profession about the experience of participation in postgraduate study and the impact this has had for participants.

This current research has sought to add to this existing body of knowledge regarding participation in musculoskeletal physiotherapy postgraduate study. In this qualitative descriptive inquiry, nineteen musculoskeletal physiotherapists who had completed the McKenzie Institute's Diploma in MDT, were interviewed to to explore their motivations for participation, their experience of undertaking the diploma programme and how it has influenced their clinical and professional development.

Focus of Inquiry

My research question was: "What has been the experience and impact for physiotherapists participating in and completing the McKenzie Institute's Diploma in Mechanical Diagnosis and Therapy?"

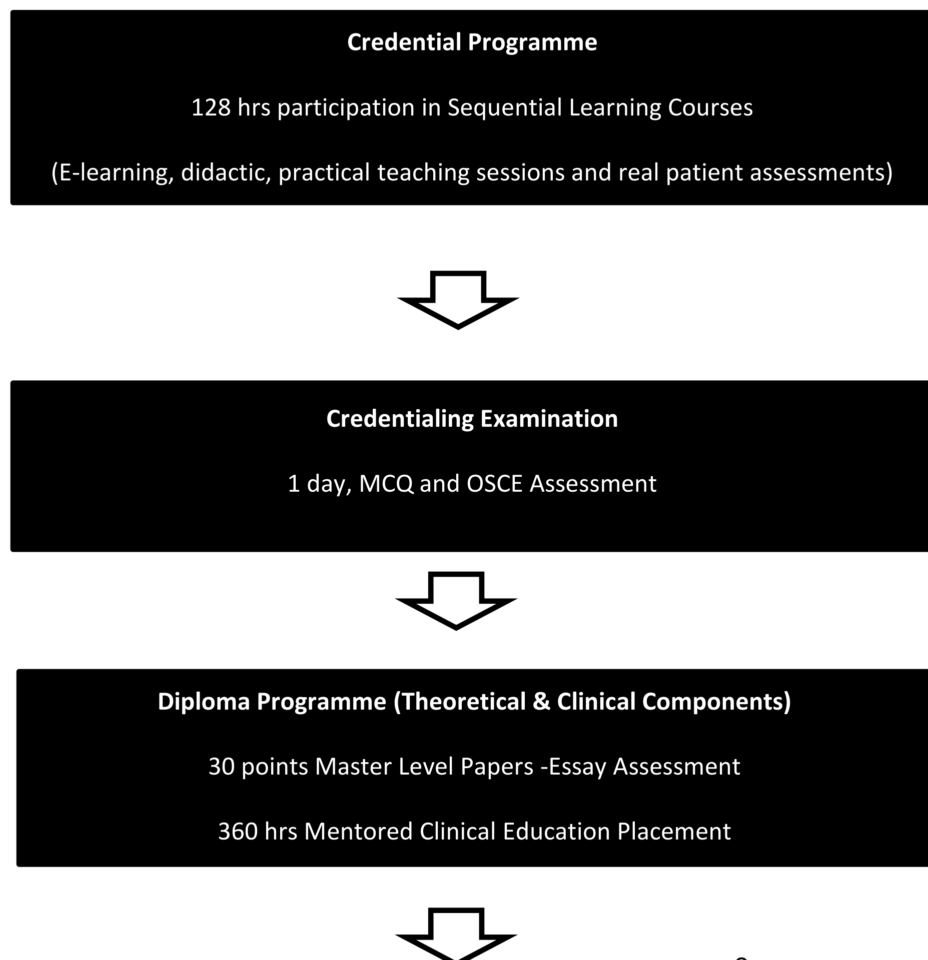
Aims of this Study

The aims of my study were:

- To explore physiotherapist's motivation for participation in the MDT diploma programme.
- To provide insight into the experience of participation in MDT diploma programme across each component of the programme.
- To identify the effect of having this level of MDT competency on clinical and professional development.
- To explore any opportunities and challenges presented to participants following completion of the MDT diploma programme.
- To consider implications of the study's findings for informing the future development and delivery of the McKenzie Institute's diploma programme.

Introducing the McKenzie Institute and its Education Framework

The McKenzie Institute was founded in 1982 by New Zealand physiotherapist Robin McKenzie. It is comprised of 28 branches internationally and all contribute to the goals of the institute in their respective countries. The Institute's primary premise is "to educate and promote the philosophy, principles, and treatment developed by Robin McKenzie known worldwide as the McKenzie Method of Mechanical Diagnosis and Therapy or MDT. MDT encompasses the assessment, treatment, education, and empowerment of patients with musculoskeletal disorders" (MII, 2017). The McKenzie Institute's education programme initially involved Robin McKenzie lecturing throughout the international musculoskeletal physiotherapy community, as well as interested clinicians from around the world spending time with Robin in his clinic undertaking a three-month clinical mentorship. From 1991, the McKenzie Institute recognized the need to formalise and gain greater credibility for the MDT education processes, introducing a sequential learning programme as well as a staged competency framework. Below represents the McKenzie Institute's current education and assessment structure.



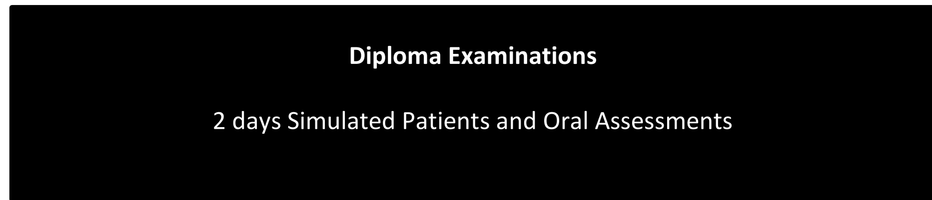


Figure 1: The McKenzie Institute Education and Assessment Framework

The McKenzie Institute Diploma Programme

The McKenzie Institute diploma programme is divided into three components and progression is dependent on successful completion of the previous phase. The theoretical component comprises a 30-point masters' level paper, "Foundations in Mechanical Diagnosis and Therapy" that is delivered via distance learning in partnership with tertiary institutions. The clinical component of the diploma programme involves 360 hours of observed clinical practice with a clinical educator. The clinical educator is a McKenzie Institute faculty member. Their role is to guide the development of the diploma candidate. This involves the process of building rapport, facilitating knowledge and skill advancement, giving feedback and formal assessment. Diploma candidates can choose where they wish to undertake this portion of the programme from multiple international venues. The diploma programme final examinations are held a minimum of two months after completion of the clinical component. They are conducted in English by a panel of examiners appointed by the McKenzie Institute and consist of four exams of 45 minutes duration run over two consecutive days and include simulated patient and oral testing formats. A pass in all three components is required to achieve the Diploma in Mechanical Diagnosis and Therapy.

Rationale for Current Study

In discussion papers on physiotherapy and postgraduate study, Gosling (1997, 1999) stated that the changing requirements of clinical practice, the increasing need for physiotherapists to work independently and to be more analytical and evaluative of their practice, supported the relevance of undertaking postgraduate study. In the intervening years, masters' level study has been identified as an important dimension of continuing professional development, clinical expertise and progression onto more advanced and specialist roles within musculoskeletal physiotherapy (Australian Physiotherapy Association (APA), 2017; CSP, 2016; PBNZ, 2017;

Petty, 2015; Rodeghero et al, 2015; Rushton & Lindsay, 2010). Such developments have occurred worldwide with a proliferation of musculoskeletal postgraduate programmes now being offered (American Physical Therapy Association (APTA); 2015, Green et al, 2008; Reid, 2013). Development in this area is informed by the International Federation of Orthopaedic Manual Therapists (IFOMPT) along with national standards of educational practice (Rushton & Lindsay, 2010). Since its inception, the MDT diploma programme has continually evolved to stay aligned with contemporary advancement and expected standards in musculoskeletal postgraduate physiotherapy education. Accordingly, from 2006, the McKenzie Institute has partnered with the university sector to deliver the theoretical component of the programme at masters' level (University of Dundee, 2017).

Mechanical Diagnosis and Therapy has been extensively researched in terms of reliability, efficacy and outcomes for patients (Clare, Adams & Maher, 2004; Fairbank et al., 2011; Long, Donelson & Fung, 2004; May & Aina 2012; May, Littlewood & Bishop, 2006; May & Ross, 2009; Schenk & Jozefczyk, 2003; Werneke et al, 2014). Also, since its development MDT has been scrutinized and critiqued widely by the larger community of musculoskeletal researchers, academics, and clinicians. The system has been modified over time in response to clinical needs and research findings. There has, however, to date been no exploration regarding the McKenzie Institute's education system and the impact or value to participants in undertaking MDT musculoskeletal postgraduate study.

Physiotherapy Musculoskeletal Postgraduate Study - Background to Growth

Historical

In the formative years of musculoskeletal physiotherapy post professional learning most education was achieved by taking short courses that were led by prominent clinicians. These early pioneers then established more formal qualifications in their respective countries but also developed the formation of an umbrella group, the International Federation of Orthopaedic Manipulative Physio (Physical) Therapists (IFOMPT) (Reid, 2013). One of IFOMPT’s roles is to inform international academic standards for musculoskeletal postgraduate education (IFOMPT, 2017). With the transition of physiotherapy undergraduate programmes into universities and the

minimum entry level qualification becoming a Bachelor degree, providers of musculoskeletal physiotherapy postgraduate study recognised the need to form links with the university sector to achieve education that was at or equal to masters' level, to ensure qualifications that afforded international recognition and mobility (Reid, 2013).

Historically musculoskeletal physiotherapy postgraduate masters' level education drew criticism from some members of the musculoskeletal physiotherapy community, equating it with a pathway towards academic advancement and leading experienced clinicians away from clinical practice (Gosling, 1999). Also challenged was the clinical utility of a theoretical based course of study (Gosling, 1999). Conversely, other groups recognized the need to achieve integration of clinically focused teaching with theoretical underpinnings to advance the recognition of musculoskeletal physiotherapists in healthcare provision and additionally offer up a broader range of scope for career development (Gosling, 1999).

Clinically orientated musculoskeletal postgraduate programmes at masters' level have been developed worldwide. Learning at this level aims to develop critical analysis of current practice and one’s assumptions, while incorporating evaluation of research and how it relates to practice. It also looks to develop the ability to deal with complex issues and situations systematically with acceptance of different perspectives. Further it seeks to promote enhanced clinical decision making and evaluation of clinical care with an improved capacity for independent inquiry (Gosling, 1997; Petty, 2015; Rushton & Lindsay, 2010). Emphasis is also placed on expanding and refining practical skill development. An essential element of these programmes is the requirement for mentored clinical placements for situated learning (IFOMPT, 2008)

Continuing Professional Development

Within healthcare provision there is demand from legislation, professional governing bodies and the public for clinicians to continually review their skills and knowledge to stay current with changes in health delivery and practice. Continuing professional development (CPD) is considered key to this process (French & Dowds, 2008). CPD is defined as being more than just undertaking continuing education as it acknowledges all the processes that may contribute to professional growth (Gosling, 1996). It encompasses participation in any activities that maintain, enhance and extend knowledge, skills, behaviours, expertise, and competence following post-

professional training (Chipchase, Johnston & Long, 2012; Gosling, 1997; French & Dowds, 2008). CPD reinforces the currency of seeking lifelong learning opportunities in response to changing professional needs (Glover, Bulley & Howden, 2008). In contemporary terms it is underpinned by the theoretical perspective that professional learning requires expectation of a reflective stance being taken by the practitioner (Schon, 1990). Additionally, it requires a learner who takes responsibility for their own learning needs (Knowles, Holten & Swanson, 2005).

Continuing professional development has been a part of physiotherapy profession since the 1990's (French & Dowds, 2008). More recently, world-wide, there has been the introduction of mandatory CPD in response to law amendments governing health providers. In New Zealand legislative changes (Health Practitioners Competence Assurance Act, 2003) have mirrored those overseas (Heath Act, 1999). Internationally physiotherapy professional regulatory bodies have implemented compulsory CPD as a means of ensuring ongoing competence of physiotherapy practitioners. Registering or professional physiotherapy bodies enforcing mandatory CPD set minimum activities that individuals must complete along with submission of evidence portfolios to ensure the contemporary competence of their members (PBNZ, 2009). While compulsory CPD has had a positive correlation on the number of hours of CPD undertaken by physiotherapists (French & Dowds, 2008), empirical evidence to support the link between mandatory CPD and improved competence of practitioners is equivocal. Furthermore, it has been proposed that mandatory CPD may compromise individual responsibility and choice in CPD activities which appears in conflict with adult learning concepts of self-direction and intrinsic motivation (French and Dowds, 2008; Knowles et al, 2005).

While there are differences internationally regarding the specifications for CPD, consistent requirements are the inclusion of informal learning and formal learning opportunities (French & Dowd, 2008). Both informal and formal opportunities are valid if they address competence and the individual's needs, goals and aspirations (PBNZ, 2009). Informal learning activities consist of unstructured activities that can be self-directed such as accessing and critical appraisal of knowledge from varying sources, review of literature and reflection on experience or learning gained from the work individuals do within their professional environment. This can include in-service training, case studies, peer review, peer presentations, supervision and participation in professional committees and groups. Formal learning is more structured and

involves the following core activities: 1. participation in online learning modules, short courses, and postgraduate study. 2. presentation and/or coordination of educational activities. 3. participation in research (Ahuja, 2011; French & Dowds, 2008; Leahy, Chipchase & Blackstock, 2017; PBNZ, 2017)

Within the current literature, there is little in terms of comparative assessment of the effectiveness of informal versus formal CPD and limited supporting evidence or guidance on the most valuable model to enhance physiotherapists' competency or professional development (Ahuja, 2011; French and Dowds, 2008; Leahy et al., 2017). Three studies (French, 2006, Gunn & Goding, 2009; Stevenson, Lewis & Hay, 2004) focusing on surveys, reported that physiotherapist expressed a preference for and perceived formal based learning as being of greater importance for CPD activities versus informal learning.

Advanced Roles

The demands of clinical practice have also strengthened the relevance of postgraduate study. Internationally health care systems have been transforming, in response to rising health provision costs, shortages of physicians and assertion of allied health professional autonomy, by developing and implementing new models of care (Kennedy, Robarts & Woodhouse, 2008). This has resulted in the creation of role enhancement and musculoskeletal physiotherapists have become key providers of these new roles (French & Dowds, 2008; Kennedy et al, 2008). The United Kingdom, Canada, Australia and New Zealand have all developed enhanced roles involving extended scope of practice for musculoskeletal physiotherapists, including the titles of extended scope practitioner, advanced practitioner and specialist physiotherapist (Kennedy et al, 2008; Stanhope, Grimmer-Somers, Milanese, Kumar & Morris, 2012). To fulfil the demands of these roles, regulatory bodies (PBA, 2017; CSP, 2015; PBNZ, 2015) and employers have stipulated that post holders not only require relevant clinical experience but also need to be engaging in or prove educational and professional development at postgraduate, masters' level or beyond. Sran and Murphy (2009) assert that a physiotherapy postgraduate qualification produces practitioners that can characteristically manage patients with more complex conditions better and that clinical outcomes are enhanced.

Accordingly, the above factors have not only resulted in the growth of postgraduate musculoskeletal programmes offered but also enrolment in such programmes.

Choice of Research Methodology

Within research, there are multiple ways of finding out what is known and representing that knowing. Traditionally researchers in musculoskeletal physiotherapy have favoured and utilised quantitative research to develop and progress knowledge for practice. Quantitative research is underpinned by the ideals of the positivist paradigm and the use of the scientific method (Grant & Giddings, 2002). This approach is guided by the objective search for one truth through systematic, detailed observation and measuring, hypothesis testing and verification via repeatability (Petty, Thomson & Stew, 2012).

Gibson and Martin (2003) along with Petty, Thomson and Stew (2012) put forth that including qualitative approaches in musculoskeletal physiotherapy research may contribute to a deeper understanding of ourselves as practitioners, our practice with patients and provide insight into the less tangible aspects of musculoskeletal physiotherapy practice. Qualitative research can be underpinned by the ideals of various paradigms, post-positivism, interpretivism, radical/critical and post-structural. But essentially the uniting premise is that in contrast to positivism, there is no one truth, that there exist multiple realities (Crotty, 1998). That ascribed meaning and understanding is subjective, varied, based on individual perceptions/interpretations and is socially, culturally and contextually constructed. It involves understanding an event or phenomenon from multiple views to attain knowledge and evidence (Grant & Giddings, 2002).

This study, in wanting to explore the perspectives and experiences of physiotherapists undertaking a specific postgraduate programme, a qualitative descriptive methodology was utilised. The voices of the participants were gained via semi-structured interviews and representation of their voiced stories, the data, was achieved by thematic analysis. While other qualitative approaches may aim to expose discourse or processes of marginalisation, develop theory or interpret data according to existing theories, qualitative descriptive research purpose is to provide an accurate description of an experience or event and the meanings participants ascribe to that experience or event (Neergaard, Olsesn, Andersen & Sondergaard, 2009;

Sandelowski, 2000). As described by Sandelowski (2010), when coming from a post-positivist philosophical position, qualitative description retains a measure of objectivity by staying close to the stories of the participants. A level of interpretation is still involved but what is not required is to reconceptualise or transfer the data into more abstract concepts. As this inquiry was an exploratory study, seeking to hear the voices of the participants, conveying a comprehensive, descriptive summary in a coherent manner that stayed close to the data was deemed an appropriate approach.

Role of the Researcher

In qualitative research methodologies, the researcher is actively involved in the research process and knowledge generated is co-constructed by both the research participants and the researcher (Grant & Giddings, 2002). Acknowledging the researchers own experiences, values and biases become part of the research process, therefore, it is important that I introduce myself in relation to this research. I undertook this study as the final requirement for a Masters' of Health Science degree. I am a musculoskeletal physiotherapist and my current clinical role is that of an Advanced Practitioner Physiotherapist within the New Zealand health care system. I have completed all stages of the McKenzie Institute's education and assessment framework and hold a Postgraduate Diploma in Health Professional Education. I am also a probationary member of faculty with the McKenzie Institute New Zealand Branch. This is a non-reimbursed and non-employment relationship for the period of probation.

Initially, as I started my professional journey as a musculoskeletal physiotherapist, I reasoned that practical experience with patients and professional socialisation with colleagues over time would progress me. But as time passed I continued to struggle with my professional identity. Reflection on my practice left me cognisant that I felt I was still lacking in many aspects regarding patient interactions and interventions. I realised that I needed to cultivate a pathway of sustained and directed learning that would work towards me moving from a novice to more expert practitioner. Initially, I created for myself a descriptive list of what I proposed an "expert" practitioner was and should feel like, along with all the skill sets I would need to develop to achieve this. Secondly, I turned to the literature around the development of expertise in musculoskeletal

physiotherapy. The evolution of more expert practice in musculoskeletal physiotherapy defined clinical experience with patients, having mentors in practice and formal postgraduate education as being instrumental processes for progression of practice knowledge and clinical reasoning (Jensen, Gwyer & Shepard, 2000; Resnik & Jensen, 2003). I undertook and participated in many postgraduate musculoskeletal short courses and sought out many mentors. While all gave me further procedural knowledge I felt they did not align well enough with my perception and expectations of how I wanted my practice to look, feel and evolve.

In 2006 I commenced my first Mechanical Diagnosis and Therapy course. The logical structure, clinical reasoning framework and patient centred approach fitted with my perception of how I wanted my practice interactions and interventions to be. Access to educators and mentors that modelled my ideal of expert, along with the sequential educational programme gave me a progressive scaffold to help achieve my transition to a more expert practitioner. Participation in the MDT diploma programme proved to be my most transformative learning experience. Not only did it further advance my theoretical understanding and clinical application of contemporary musculoskeletal care, it also spurred academic, professional and personal growth.

In undertaking postgraduate study with an education focus, I began to theoretically and critically engage with aspects of health professional education and development of practitioners from novice to expert. Research suggests that postgraduate physiotherapy study can impact participants intellectually, professionally and personally (Constantine & Carpenter, 2012; Green et al, 2008; Perry et al, 2011; Stathopoulos & Harrison, 2008). Though my experience of completing the MDT diploma programme somewhat mirrors these findings, I continued to think about the impact of this level of study not only for myself but also for others; what had been the experience of those that also participated in the MDT diploma programme? And while it may be possible to transfer understanding and insights from prior research, the McKenzie Institute's diploma programme model provides a unique contextual difference. It is one of the few musculoskeletal postgraduate programmes offered internationally and accordingly has a global cohort of participants. Consequently, the experiences and impacts for participants of the MDT diploma programme may vary and have been broader than beyond my personal understanding.

Summary

Changes in health professional governance and health provision contexts, have resulted in all health professionals, including physiotherapists, being required to engage in continual professional development. Participation in postgraduate study has been advocated as one means of achieving this. This fulfils not only the mandatory requirements but also looks to advance practice expertise enabling practitioners to take on enhanced practice scope physiotherapy roles. Musculoskeletal physiotherapy, as a specialty area of physiotherapy, has promoted study programmes, at or equal to masters' level, which incorporate both theoretical and clinical learning, as a pathway to improve both academic and clinical expertise. There is a multitude of programmes available. The Diploma in MDT is one specific programme of musculoskeletal postgraduate study offered by the McKenzie Institute International. This qualitative descriptive study seeks to provide an exploration of the experience of musculoskeletal physiotherapists in undertaking and completing the McKenzie Institute's Diploma in MDT.

Thesis Structure

In chapter one I have introduced the reader to the context of this research, the chosen research design and myself as the researcher.

Chapter two situates this research within the existing literature and brings together relevant information regarding musculoskeletal postgraduate study and education.

Chapter three outlines the research design that was used in this study. Presented are the methodology and methods, including recruitment processes, data collection, data analysis, rigour and ethical considerations.

Chapter four presents the findings from the interviews in relation to three themes; "Trust and Hope in the System, "Learning to fully Trust the System" and "Beyond the System".

Finally, Chapter five considers the three themes identified, in relation to previous research and then discusses implications that might be drawn. Strengths and limitation of the study are also examined.

Chapter Two – Literature Review

Introduction

Participation in formal continuing professional development in the form of postgraduate study, associated with or within a tertiary institute, has been identified as a primary means for developing expertise within a given area of physiotherapy practice (Conneely, 2005; Gosling, 1997; PBNZ, 2017; Petty, 2015). Accordingly, over the last 10-20 years, participation in postgraduate physiotherapy study is increasingly evident, with programmes offered over varying specialty areas. Musculoskeletal physiotherapy is one such specialty area. The increasing contemporary expectation of postgraduate study within the physiotherapy profession has generated literature within the discipline regarding postgraduate study. Much of this research has been qualitative in nature and has focused on understanding and depicting the experience of physiotherapists as participants in the educational process. This literature review aims to explore and share the findings of related studies regarding musculoskeletal physiotherapy and postgraduate study and provides a context and structure for this inquiry. It describes what musculoskeletal physiotherapy postgraduate study entails. It also explores why physiotherapists consider undertaking this type of study and potential barriers to participation. Discussion regarding the attributes of expertise in musculoskeletal physiotherapy practitioners and learning journeys undertaken during postgraduate study is also considered. Finally, the impact of participation in musculoskeletal postgraduate study, beyond completion of a programme of education, is reviewed.

Musculoskeletal Physiotherapy and Postgraduate Study

Within physiotherapy, there are specialty areas where an individual seeks to improve their depth and breadth of knowledge and skills to advance their clinical competence in a specific aspect of practice. It has been suggested that pursuing specialisation is appropriate when the complexity of assessment and management skills needed, extend beyond the defined general scope of professional practice (Sran & Murphy, 2009). The changing demands of contemporary physiotherapy clinical practice, enhanced roles and the recognition of physiotherapists being

direct access musculoskeletal primary care providers of choice, all support the relevance of an individual developing advanced practice skills in this area (McPherson et al., 2006; Rodeghero et al., 2015). As a specialty area, musculoskeletal physiotherapy can be defined as physiotherapy which treats injuries and conditions which affect the muscles, joints and soft tissues (CSP, 2017). More comprehensively it is a specialty area of physiotherapy which looks at the conservative management and prevention of pain and other symptoms in the spine and the extremities. Patient management is individualised and encompasses a bio-psychosocial framework using clinical reasoning, therapeutic exercise and manual therapy techniques in the treatment approach (IFOMPT, 2016).

Postgraduate study in the tertiary provider context is described as learning that occurs at a higher level than undertaken at an undergraduate level. Gosling (1997, 1999) states that within this environment physiotherapy postgraduate study is defined as being at masters' level and should include learning that develops the ability to critically review and evaluate professional assumptions and paradigms of current practice, engage the student in research-based education and that the student should be able to study independently as well as collaboratively.

Musculoskeletal postgraduate study at this level is further informed by the International Federation of Orthopaedic Manual Therapists (IFOMPT). IFOMPT represents a group of musculoskeletal physiotherapists around the world who have completed stringent post-registration/post-graduation specialised programmes. As part of IFOMPT's organisational objective, they provide an educational standards framework for providers offering musculoskeletal postgraduate education programmes. IFOMPT's framework aims to promote excellence in academic and clinical standards, with the competencies outlined providing a comprehensive guide versus absolutes for acceptable education and training (IFOMPT, 2016). The framework is underpinned by contemporary principles of adult learning theory and is contextually based. The requirements that learning emphasizes enhancement of clinical skills and reasoning, in the actual clinical setting, is reflected in the inclusion of both practical skill development with mentored clinical practice components alongside evidence-based theoretical learning (IFOMPT, 2016). This inclusion acknowledges and values the processes of experiential learning that has been postulated to inform advanced clinical practice (Ajjawi & Higgs, 2008; Gosling, 1999; Petty, 2015).

Around the world, there are multiple musculoskeletal postgraduate physiotherapy programmes being offered. Rushton and Moore (2010), using a consensual Delphi process, classified international research priorities for developing a greater evidence base in musculoskeletal physiotherapy. An area of importance identified was the exploration into existing models of postgraduate education.

The McKenzie Institute offers a model of musculoskeletal postgraduate education. Studies investigating the McKenzie approach have tended to focus on quantitative investigations of reliability, efficacy and patient outcomes. Inference of the effectiveness of MDT education has been attempted by correlating to reliability outcomes. Results of these reliability studies vary. Researchers who utilised clinicians without the minimal competency of credentialed level MDT education showed poor results (Kilby, Stigant & Roberts, 1990; Riddle & Rothstein 1993; Werneke et al., 2014). However, in contrast, investigators (Razmjou, Kramer & Yamada, 2000; Kilpikoski et al., 2002; Clare, Adams & Maher, 2003; Clare, Adams & Maher, 2005; May & Ross 2009; Abady, Rosedale, Overend, Chesworth & Rotondi, 2014) that included clinicians who had attained credentialed or diploma status in MDT demonstrated acceptable levels of reliability. While these studies recognise that the education model can provide consistency of the systems assessment processes, they give very little insight beyond. To date there are no known qualitative inquiries into the McKenzie Institute's model of education from any perspective, this investigation to explore undertaking the MDT diploma level programme is therefore deemed relevant not only at the specific organisational level but further in terms of the wider scheme of musculoskeletal physiotherapy postgraduate education research.

Motivators

In the context of this study, it is acknowledged that candidates who progress onto the MDT diploma programme have already undertaken a considerable commitment to post professional study by working through the MDT credentialing programme and examination. Therefore, what drives and motivates them to move to the next level becomes a question of consideration.

Motivation can be thought of as the causal factor for action. Specific literature as to what motivates physiotherapists to participate in musculoskeletal postgraduate study is limited. However, within the research regarding physiotherapy participation in continuing professional

development (CPD) facilitating factors have been broadly divided into two categories, extrinsic and intrinsic (e.g. Ahuja, 2011; Glover, Bulley & Howden, 2008; French & Dowds, 2008; Ryan, 2003). Universally, professional obligation as mandated by regulatory bodies is the foremost extrinsic motivator for individuals to embrace ongoing professional development (Ahuja, 2011; Glover et al., 2008; French & Dowds, 2008; Ryan, 2003). This mirrors findings from other allied health professional groups (Conneely, 2005; Mubuuke & Pope, 2015). Gunn and Goding (2009) also established that elevation of professional status both within the physiotherapy profession and as part of the wider healthcare team was another contributing extrinsic factor. Furthermore, seeking to improve patient outcomes has also been highlighted (Gunn & Goding, 2008; Chau et al., 2012).

Chau (2012) found that specific to musculoskeletal physiotherapists, this concern for improving outcomes was also linked to the most dominant intrinsic motivating factor, the desire for individuals to increase their knowledge base and advance their practice competency. As musculoskeletal physiotherapists working predominately in direct patient contact, most stated staying current and being able to appraise the latest clinically relevant research and evidence, informed their practice to provide optimum care. The need to explore more fulfilling and challenging professional roles in the search for improved job satisfaction along with the potential for career promotion were also consistent findings in terms of intrinsic motivators within the literature (Chau et al, 2012; Glover et al, 2008; Perry et al., 2011; Ryan, 2003).

Barriers

While musculoskeletal physiotherapy postgraduate study offers the opportunity to develop practice, barriers to participation also exist. Barriers can be determined as an obstacle that prevents or reduces access. Both extrinsic and intrinsic barriers have been identified in the literature. Key limiting extrinsic factors include lack of funding and lack of employer support (Chau et al, 2008; Glover et al., 2008; Sran & Murphy, 2009). Highlighted, in terms of employer support, was that employers' as well as endorsing postgraduate study, should also look to provide negotiable work structures to allow time for study. In the private practice context, with many clinicians being self-employed, time away from work and a resultant loss of income posed significant consideration before undertaking postgraduate study (French & Dowds, 2008). Although work-based barriers are implicated, personal commitment and conserving protected time

for study have been additionally emphasised, with conflict arising between that protected time and competing family and life interests being highlighted (Conneely, 2005; Glover et al, 2008; Perry et al., 2011). Sran and Murphy (2009) noted that most physiotherapists thinking about participation in postgraduate study prefer part-time programmes versus full time to allow continued engagement in other aspects of life.

Historically geographical accessibility has been considered a barrier to participation in physiotherapy postgraduate study (Gosling, 1999). However tertiary education provision has undergone enormous change in the last two decades. Educational institutes have introduced online learning (e-learning) programmes that employ both synchronous and asynchronous participation platforms and accommodate both part-time and full-time study (Peacock & Hooper, 2007). Musculoskeletal physiotherapy postgraduate programmes have adopted distance learning as part of blended learning strategies for programme delivery. Not only does this collapse geographical obstacles for participants but it also provides opportunities for independent and collaborative learning (Chipchase, Johnston & Long, 2012; Peacock & Hooper, 2007).

Research into other health-related disciplines has shown that web-distance learning is equal to traditional teaching delivery formats, having both a positive role in nursing education along with high satisfaction from participants (Du et al., 2013). Peacock & Harper (2007) in their discussion paper on e-learning in physiotherapy postgraduate education found that student evaluation of this type of knowledge acquisition was similarly positive, with participants stating it facilitated deeper engagement with the learning material and allowed the opportunity for challenging dialogue with peers.

Another reported intrinsic barrier regarding participation in further academic study was individuals' negative beliefs of their ability to study and be successful at postgraduate masters' level. Authors (Conneely, 2005; Glover et al 2008; Gosling, 1997; Shanley & Lambon, 2016) identified that tertiary providers need to familiarise potential candidates with what study at this level entails. Raising awareness and providing support and reassurance for those undertaking postgraduate study in the initial phases as well as throughout the course of the programme, helped reduce uncertainty for participants and enhanced success (Glover et al, 2008; Shanley &Lambon, 2016).

Recognizing and achieving a greater understanding of factors that influence continuation through the MDT education structure to progress through to undertaking the Diploma in MDT can inform not only the McKenzie Institute and its education faculty but also potential future participants about the issues involved in embarking on this next level of MDT study.

Learning and Development

A common aim of musculoskeletal physiotherapy postgraduate study is to enhance the learning and advancement of clinical expertise in clinicians. This raises the question of what is considered clinical expertise. In her pioneering studies into clinical practice, Benner (1982), through observation and interviews of nurses, outlined a hierarchy of practice in clinical nursing. Described are five stages of development; novice, advanced beginner, competent, proficient and expert. These findings formed a basis to prompt other health professions to explore the novice to expert processes and what expert practice encompassed within their clinical disciplines. A theoretical model of expert practice across all areas of physiotherapy proposed by Jensen, Gwyer, and Shepard (2000), includes four dimensions; 1. A dynamic, multi-directional knowledge base that is patient centred and evolves through therapist reflection 2. Clinical reasoning that is collaborative for problem-solving with the patient 3. Using assessment of movement that is linked to patient function versus diagnosis 4. A consistent moral caring commitment demonstrated to patients. This model was acknowledged as a starting point for continued discussion and inquiry within the profession.

Rushton and Lindsay (2010) looked specifically at musculoskeletal physiotherapy practitioners and defined a construct of expert masters' level practice. Via triangulation of the data from postgraduate student interviews, mentors, and researcher observation, they highlighted high levels of clinical reasoning, developed and advanced use of knowledge base, high level of psychomotor skills, patient centred approach and personal characteristics of critical reflection in action, along with high self-analysis as key components. Likewise, Petty's (2015) definition and summary of the attributes of clinical expertise in musculoskeletal physiotherapy parallels the above and includes the elements of patient centred practice, critical evaluation, and understanding of practice by the clinician and the capacity to learn in and from their practice. Furthermore, IFOMPT outlines, within the three areas of knowledge, skill and attributes, ten dimensions of practice which are considered as critical features for performance of musculoskeletal

postgraduate level practice. Expert practice at this level comprises collaborative patient-centred care along with advanced clinical decision making informed by both empirical evidence and patient preference, while being up to date, ethical and resource efficient (IFOMPT, 2016).

How does clinical expertise develop and move from basic competence to higher levels? Miller's Pyramid (Miller, 1990) illustrates this progression in stages from knows, to knows how, to shows how, through to does. Krathwohl (2002), in reviewing Bloom's Taxonomy of educational objectives, similarly identifies a progression of cognitive differentiation that indicates movement from initial stages of knowledge, comprehension, and application, through higher levels of thinking, analysis, synthesis, and evaluation. Attending to cognitive progression provides support for the more recent rejection of the traditional thinking within musculoskeletal physiotherapy that time and accumulation of clinical mileage through patient volume, built proficiency and advanced competency (Ajjawi & Higgs, 2007; Petty, 2015, Richardson, 1999). Current emphasis also includes that progression to expertise is linked to an individual's willingness and ability to question, reflect and respond effectively to new knowledge and clinical experiences (Connaughton & Edgar, 2011; Petty, 2015).

In relation to musculoskeletal physiotherapy postgraduate study, Perry et al (2011) put forth an explanatory knowledge acquisition model which divided the development of clinicians during their study into five phases; expectancy, incredulity, deconstruction, reconstruction, and actualisation. They described a journey of development which questioned participants existing knowledge base and thinking frameworks. During each stage, critical analysis and problem-solving processes looked to give the participants greater awareness and understanding of their practice, to allow it to evolve. The authors' advocate that in supporting participants during their postgraduate study, acknowledgement of the phase of the development they are in enhances the likelihood of their success.

Petty, Scholes & Ellis (2011) defined a continuum of learning transitions that participants' go through in achieving greater clinical expertise during musculoskeletal postgraduate study. The continuum includes antecedent conditions, expectations, learning contradiction and the reactions to those contradictions and learning outcomes. The ultimate learning outcomes encompass three developmental aspects, critical understanding of practice knowledge, patient centred practice and the ability to learn in and from clinical practice, which are all inter-related. A critical perception

around knowledge base, practice centred on the patient and the implication that learning from clinical practice is a legitimate source of improving knowledge, has previously been acknowledged in physiotherapy development literature (Ajjawi & Higgs, 2007; Jensen et al., 2000; Richardson, 1999).

As stated prior, musculoskeletal physiotherapy postgraduate educational programmes involve not only a theoretical component but also a clinical component. Findings from the literature suggest that the critical element and most powerful experience in facilitating the development of greater clinical expertise in musculoskeletal practitioners is the clinical component of postgraduate programmes (Furze et al., 2016; Perry et al, 2011; Petty et al, 2011). The clinical component, provides assistance to participants whereby a clinical educator directly observes their practice with patients and encompasses critical and reflective discussion, questions and feedback. This supports Ajjawi and Higgs (2007) argument that development of learning within physiotherapy is best undertaken in the practice context, requires explicit focused collaborative attention and dialogue, versus reliance on passive, incidental and individual internalised learning processes. Petty (2015), states that greater transformation of practice towards expertise is likely to require input from other clinicians who are working at higher levels. Direct observation of practice aims to facilitate exposure of unknown knowledge gaps and practice bias, along with subjecting the practitioner to alternative views (Petty, 2015). Exposure to alternative views allows not only confirmatory experiences to develop practice expertise but also contradictory experiences to influence it as well. Through the synthesis of collaborative reflection and critical thinking, plus heightened self-awareness, the evolution of a more advanced practitioner is considered to occur (Constantinou & Kuys, 2012; Kim, 2013; Petty, 2015).

The clinical component of the McKenzie Institute's diploma programme is offered in various clinical venues around the world. Participants choose their clinical site based on preference and eligibility requirements for different countries. Each venue has a clinical educator or educators who are faculty members of the McKenzie Institute. Does the clinical venue influence the learning and development opportunities of diploma students? This is a question for consideration. Therefore, exploration into participant experiences across different clinical venues requires justified exploration.

Impact

The impact of health professionals undertaking postgraduate study can be considered in terms of the effect on participants, patient outcomes, the profession and the wider health provision sector. However, most research regarding the effects or consequences of postgraduate study, across all health professions has largely focused on graduates' perspectives (Zwanikken, Dieleman, Samaranayake, Akwataghibe & Scherpbier, 2013). This may be due to the difficulty of defining and measuring broader tangible outcomes that can be specifically linked to higher skill level acquisition. Similarly, within the musculoskeletal physiotherapy literature on postgraduate learning, studies have predominately looked at the impact on participants.

Stathopoulos and Harrison (2003) identified both positive and negative effects of musculoskeletal postgraduate study. The positive outcomes of acquisition of advanced skills and knowledge, refined clinical reasoning, increased confidence and academic acumen, adoption of positive attitudes towards change and career opportunities have also been supported by findings from other studies (Constantine & Carpenter, 2012; Green, Perry & Harrison, 2008; Perry, Green & Harrison, 2011; Petty, Scholes & Ellis, 2011). Participants from these studies expressed a greater awareness on how to learn, with improved ability to critically engage with the literature, evidence-based promoted practice, and their own practice frameworks. Improved clinical outputs were also seen as additional positive effects, with improved ingenuity and efficiency (Constantine & Carpenter, 2011).

Further highlighted within the literature was that the positive impact of undertaking study at this level was not viewed exclusively to professional and academic growth but also had wide-reaching implications on personal confidence and growth. Improving self-worth and self-belief with the view to being able to take on additional challenges both in general life as well as professionally was echoed across several studies (Conneely, 2005; Constantine & Carpenter, 2012; Perry, et al., 2011; Stathopoulos & Harrison, 2003).

Green, Perry, and Harrison (2008) explored the career pathways of therapist's who had gained musculoskeletal postgraduate masters qualifications. Approximately one-third of their respondents surveyed were practicing in extended roles. Other recognised positive changes to

work roles included involvement in research and teaching, along with enhanced professional profile within the physiotherapy profession and the wider healthcare team.

Perceived challenges identified within the literature also related to changing work roles, with less time for clinical practice, more management responsibilities and lack of reward enhancement in terms of remuneration (Green et al., 2008). Four studies (Constantine & Carpenter, 2008; Green et al, 2008; Perry et al, 2011; Stathopoulos & Harrison, 2003) discussed the under-utilisation of potential in the workplace by employers as a source of additional challenge, with this varying according to management and work environments. Those contexts that had been exposed to having colleagues undertake study at postgraduate masters' level being more supportive than those that had not. Additionally, altered relationships with colleagues presented another considered challenge. Having a postgraduate qualification was considered as a threat to by some colleagues or alternatively colleagues placed high demands and expectations on those with the postgraduate qualification (Constantine & Carpenter, 2012).

Universally across the studies relating to musculoskeletal postgraduate study, the impact of participation was substantial for participants and occurred across the three domains of professional, career and personal life. Most studies already undertaken have been within the United Kingdom. The McKenzie diploma programme provides a global learning and education experience, whether the impact for the programmes international cohort will be similar or different needs to be explored. Do the different national physiotherapy health provision contexts and career structures have a bearing on the opportunities or challenges experienced by participants post diploma completion?

Summary

Over the last two decades, growth in the provision of and the participation in musculoskeletal postgraduate study, have seen a significant increase. A considered area of importance in musculoskeletal physiotherapy research identified is the exploration of existing models of education programmes that are offered. Review of the literature has shown, that previous research regarding musculoskeletal postgraduate education, have in general considered this type of study from the perspective of the participants. The literature has exposed both facilitating and limiting

considerations for participation. Additionally, prior research has attempted to theorise the learning stages and journeys of participants who have undertaken postgraduate study. With the aim that understanding the phases of development participants go through, will facilitate better teaching practices. Lastly, the evidence has focused on the impacts or effects which have resulted for participants who have undertaken and completed musculoskeletal postgraduate study. Identified have been growth and advancement across both the professional and personal domains. Challenges have also been presented. The aim of this study is to look at a specific programme of postgraduate study, the McKenzie Institute's Diploma in MDT. Questions for consideration are: What are the experiences of those who have undertaken and completed the MDT diploma programme? Will the findings be analogous to previous literature, or will new insights be generated? Additionally, as this study is contextually situated to a specific programme of study, within a specific organisation, will the findings be of value to the McKenzie Institute's Education Committee in refinement and development of the MDT diploma programme?

Chapter Three: Methodology

Introduction

Any research should have a purpose and employ systematic investigation aimed at the discovery and interpretation of facts that utilises procedures which are recognised and trustworthy (Petty, Thomson & Stew, 2012). This chapter outlines the research design used in this study. Included is a background to qualitative descriptive methodology as a form of qualitative research inquiry that sits within the post-positivist paradigm. Also presented are the methods, including recruitment processes, data collection, data analysis and discussion of ethical considerations.

Research Approach

"Research is about walking familiar paths but with more formal questions in mind to advance our knowledge and understanding" (Cram, 2013). It is also about "re-present", that is the care we take when we tell what we have found (Cram, 2013). I am a graduate of the McKenzie Institute's diploma programme, so as the researcher I will be revisiting with the participants the experience of undertaking the MDT diploma course of study. My intent of care will be in the commitment of honouring the voices of the participants and their experiences.

Qualitative research can be underpinned by the ideals of various paradigms, post-positivism, interpretivism, radical/critical and post-structural. But essentially the uniting premise is that there is no one truth, that there exist multiple realities (Crotty, 1998). Knowledge and understanding are not absolute but subjective, experiential and based on individual perceptions and interpretations and always related to context (Crotty, 1998; Grant & Giddings, 2002). Qualitative research situates inquiry in the natural setting to explore human experience and meaning. Within qualitative research there are an array of established methodologies. Each methodology has a specific aim and gives guidance and direction on how to articulate the research question, as well as the collection, organisation, and interpretation of the data collected (Vaismoradi, Turunen & Bondas, 2013).

For this study the methodology selected was a qualitative descriptive approach within the post-positivist paradigm. To explain post-positivism, it is first useful to define positivism. Positivism, as a paradigm, is an approach to knowing guided by the objective search for one truth, holding that understanding is based on experiment and observation with value neutral findings (Crotty, 1998; Ryan, 2006). However, post-positivism seeks to go beyond just the measurable facts to achieve insight. It asserts that truth or reality can be approached but not truly reached and because of the acceptance of subjectivity and the existence of more than one reality there is more uncertainty about what can be known (Crotty, 1998; Ryan, 2006).

Given the range of individuals being interviewed for this study, there was no expectation of there being one absolute truth regarding the experience under investigation. Post-positivism puts forth that there is no neutral knowledge and the researcher conducts the research alongside the participants, rather than at a distance from them, taking up a learning role rather than a testing one, as in positivism (Grant & Giddings, 2002). My shared understanding of the contextual influences of the experience being studied allowed engagement with the participants to be an interactive process, where the findings were constructed and shaped by the beliefs and values of both myself and the participants.

This study looked to explore physiotherapists' participation in and completion of the McKenzie Institute's Diploma in Mechanical Diagnosis and Therapy. The aim of the research fitted with a qualitative descriptive design in that it drew on the principles of naturalistic enquiry (Sullivan-Bolyai, Bova & Harper, 2005). Its purpose was to describe and document aspects of participation and completion by asking the participants questions in terms of "what", "why" or "how" to gain insight into their experiences (Sandelowski, 2000). While other qualitative approaches may aim to expose discourse or processes of marginalisation, develop theory or interpret data according to existing theories, qualitative descriptive research aim is to provide a comprehensive summary. In everyday terms, it looks to provide an accurate description of a specific event or phenomenon experienced by individuals or groups of individuals and the meanings they ascribe to that experience or event (Neergaard et al., 2009; Sandelowski, 2000).

Qualitative descriptive research does not link to a specific framework of knowledge and is often used when little is known regarding a phenomenon or as an introduction to more interpretive research (Sandelowski, 2000). As no previous research has ever looked at any aspect of the

McKenzie Institute education framework, a qualitative descriptive design was further deemed an appropriate approach. Understandings were sought that would shed new light from multiple perspectives regarding the MDT diploma programme.

Coming from its post-positivist philosophical position, a qualitative descriptive study stays close to the data and does not move too far beyond what is being said by participants. A level of interpretation is still involved but what is not required is to reconceptualise or transfer the data into more abstract concepts (Sandelowski, 2010). As a researcher representing the experience of participants, there will be no super-imposed voice and I will not be exploring why what is being said, has been said.

Role of the Researcher

As previously stated, within post-positivist qualitative research the researcher is actively involved in the research and their views around the research are acknowledged and form part of the analysis process (Crotty, 1998). While in essence qualitative descriptive methodology may imply only description, Sandelowski (2000) states that no description is ever free of interpretation. Description depends on the researchers' inclinations, understanding, and insights. Therefore, as addressed in chapter one, it was essential that I outlined and made known who I am in the context of this research, including my professional background and development of interest in this area of study. Rather than try and control or bracket my pre-existing ideas I looked to clarify, examine and acknowledge these influences by undertaking a pre-suppositions interview with my research supervisor from the Auckland University of Technology (AUT) prior to any data collection. The pre-suppositions interview illustrated that my experience of the MDT diploma programme and beyond was extremely positive in all aspects, leading to growth clinically and professionally. Though it highlighted that I was well acquainted through my own learning journey in undertaking and completing the MDT diploma programme, I did not know of the experiences of others. I could therefore, enter in to this investigation assuming a stance that Morrow (2005) frames as a naïve inquirer. In both the data collection and analysis, I sought to maintain always being open to other perspectives and alternative insights.

Method

Sampling

Purposive sampling was employed to recruit participants. The aim of purposive sampling is to obtain participants who will best supply meaningful information and insight into the experience being investigated (Grant & Giddings, 2002). Emmel (2013) suggests purposive sampling may be employed when only a limited number of people can serve to provide data regarding the research question and the purpose of the research. It requires predetermined decisions regarding participant selection.

The MDT diploma programme is offered internationally, the potential participant cohort would reflect this. The study's sample included physiotherapists who had successfully completed the McKenzie Institute's Diploma in MDT from 2006 to 2015 and had a minimum of one year since completion of the programme. MDT education has more recently been offered to other health care professionals including members of the medical community, chiropractors, and osteopaths. Uptake for the diploma programme has been predominately from physiotherapists, so the study focused on this professional group only. The MDT diploma programme has been established since 1991 but prior to 2006, it did not include completion of a formal university-based masters' level theoretical component. The intent of this research was to look at the McKenzie Institute's more contemporary programme. The decision to exclude participants with less than one year after completion was based on the premise that less than this timeframe may not have been sufficient for participants to have been exposed to potential opportunities and challenges afforded by holding a Diploma in MDT.

Recruitment

Initial correspondence was undertaken with representatives of the McKenzie Institute such that they were willing to be involved in sending out an introduction e-mail to their data base of MDT diploma holders. Participant recruitment then occurred through two strategies. The first being via the agreed to preface e-mail from the McKenzie Institute. The e-mail was sent to 129 diploma holders who met the inclusion criteria, ten were returned undelivered. The e-mail detailed that a fellow diploma holder was undertaking MDT education-related research, also attached was the study's introduction letter (Appendix B). Those interested in participation were invited to

contact the researcher directly. Secondly, the researcher, via e-mail engaged eleven known contacts within the McKenzie Institute's international community and asked them to identify and forward the study's introduction letter (Appendix B) to potential participants. This participant selection technique, referred to as snowballing, utilises existing links and networks to provide access to a larger population sample. It can establish a degree of trust for initial contact (Atkinson & Flint, 2001) and in this study proved to be an efficient method for participant recruitment.

Participants

The recruitment strategies resulted in twenty-seven participants contacting the researcher and expressing interest in the study. Seventeen via the McKenzie Institute's database email and ten from snowballing. All were electronically sent an additional information sheet (Appendix C) about the study along with an informed consent document (Appendix D) that was required to be signed and returned if they wish to participate further. Twenty-one participants gave consent and interview times were scheduled. Nineteen of the consenting participants completed interviews. Despite attempts to re-engage and contact the other two consenting participants neither followed up with the researcher and consequently they did not complete their interviews.

Data collection

Data was collected via semi-structured interviews. Because of the international cohort and projected costs and time being foreseen as a barrier, with the exception of two face to face interviews, participants were interviewed using online media. Employing synchronous technology allowed collapsing of geographical barriers however the researcher noted limitations regarding connection reliability and quality in some interviews. With this came the potential for distortion of non-verbal cues making them less evident, in some instances this required greater time or greater explanation for clarification of meaning. Before each interview commenced, the interview process was fully explained to participants and they were asked if any further clarification regarding the research was required, then verbal consent was obtained to record and commence the interview. Initially, demographic data was collected (Appendix E) including age, gender, McKenzie Institute branch, the number of years since undergraduate qualification, when participants had completed the MDT credential examination, where they completed the diploma clinical component and when they successfully completed the diploma programme. Once this demographic data was obtained,

the qualitative data was collected through the nineteen semi-structured interviews of 40-70 minutes duration.

A semi-structured approach required partial pre-planning of questions. A question guide (Appendix E) was developed based on a preliminary review of literature pertaining to musculoskeletal postgraduate study and then refined following the pre-suppositions interview. A pilot interview, with an MDT diploma holder known to the researcher but whose data was not included in the study, was also undertaken. This served to make further modifications to the proposed questions and additionally provided an opportunity to practice interview skills in the online context. Pre-planning of questions allowed for some replication of the interview between participants and was designed to facilitate the participants' recall of undertaking each component of the diploma programme and beyond while allowing flexibility to explore areas that they wish to emphasise or that held meaning for them.

Data analysis

The two face to face interviews were recorded on a digital recorder and then downloaded and stored to the computer. The remaining seventeen online interviews were recorded on MP3 Skype recorder programme 4.24 and saved to the computer. Access to the computer was protected by a password. The recordings were transcribed by the researcher. A copy of the transcript to check for accuracy was available for each participant following their interview. Only one participant requested their transcript and no changes were asked for. Both the digital recordings and the transcripts became the working data.

Telling the stories that arise from the data creates an obligation on the part of the researcher to be rigorous in analytic procedures and in qualitative descriptive research maintain the commitment to care of a faithful representation of participants' experiences. In this study, I used the six stages of thematic analysis as outlined by Braun and Clarke (2006). I considered this as a methodologically consistent approach for inductive consideration of the data. Thematic analysis involves seeking common threads that spread across an interview or a set of interviews (Vaismoradi et al., 2013). In contrast to deductive processes where themes are established in relation to theory or prior research, an inductive approach derives themes directly from the data which are relevant to the research question and aims (Vaismoradi et al, 2013).

Initially, the interviews were repeatedly listened to and read to create familiarity with the data. This process began after the first two interviews had been completed and transcribed. Consistent with most qualitative research ongoing data collection and analysis was an iterative process, occurring simultaneously (Jones, 2002; Vaismoradi et al, 2013). Following familiarisation with the data, manual coding was undertaken. Systematically working through each interview common words or phrases were highlighted and coded, then set out on a spreadsheet with accompanying quotes relevant to each code. With thematic analysis the significance of the data is not necessarily related to the quantity of a code. Also considered are perspectives that may differ from the so-called norm and that in some way capture information that is relevant to the research question (Vaismoradi et al., 2013). Stage three involved sorting the varying codes into potential themes and sub-themes. This re-focuses the analysis at a broader level (Braun & Clarke, 2006) and looks to re-sort all the codes and quotes under those themes. This process involved using mind-maps as a visual representation of each potential theme (Appendix G). Once the themes and sub-themes that were considered representative of the data had been identified, further revision and refinement, then defining and naming of the themes was required. Three overarching themes were identified from the data: “Trust and Hope in the System”, “Learning to fully Trust the System” and “Beyond the System”.

Ethical Considerations

Any research undertaken needs to address balancing the risk of participation versus the benefit of increasing knowledge around an area of interest while seeking to do no harm (Nobel-Adams, 1999). Consideration and sensitivity to this is the premise of ethics in research. The Auckland University of Technology Ethics Committee (AUTEC) granted ethical approval for this research on 26th July 2016 (Appendix A). Discussed below are the specific ethical considerations for this study.

Informed and voluntary consent

A key concept in ethical considerations is respect for people. Respect translates to ensuring that any participants within a study maintain autonomy, that they have become involved voluntarily and with informed consent (National Ethics Advisory Committee (NEAC), 2012). Participants were

introduced to the study via the McKenzie Institute or a member of the McKenzie Institute. Potential participants were asked to contact the researcher directly with initial expressions of interest via email. Following this, all potential participants were emailed a more detailed information document of the research (Appendix C) and a consent form (Appendix D) outlining their involvement. Explicit in each document was that participation was entirely voluntary and that participation could be withdrawn at any time.

Confidentiality and anonymity

Because of the nature of the data collection, true anonymity is difficult however confidentiality as it relates to the right of privacy can be upheld (Whiting, 2008). To maintain confidentiality within this research, administrative, demographic and transcript data was de-identified so that the privacy of all participants remained protected throughout the process. Each participant was assigned a number and any information regarding participants was linked to this number. All information regarding participants collected for the research was stored in locked files or under password protected electronic files. As the McKenzie Institute is a connected community made up of relatively small numbers there is the potential that by just telling their story this could lead to a participant's identity being disclosed. This was acknowledged in the information sheet (Appendix C) and prior to interviews. Reiterated was any reports generated would use pseudonyms so that information presented would not allow identification of any participant.

Minimisation of risk

It was intended that no harm should come to any participants as a result of being part of this research. However, interviews bring with them an element of uncertainty regarding what may be revealed and could bring about unanticipated emotional responses that are challenging for participants (Whiting, 2008). Participants were informed of this possibility as part of the consent process and prior to the interview participants were advised that they may break or discontinue the interview at any time. In conducting research there can be the potential for power relationship inequality between the researcher and participants. AUTEC review of the ethics proposal viewed that this was a low-risk study and no additional provisions beyond an ongoing thoughtful regard for potential breaches of privacy or power relations was required.

Avoidance of conflict of interest

As the primary researcher, I am a probationary faculty member of the New Zealand branch of the McKenzie Institute. Additionally, my secondary supervisor is a senior faculty member and International Director of Education within the McKenzie Institute. Holding these positions gives the perception of insider status and creates the potential for conflict in terms of the research findings. This was discussed with my primary research supervisor and the additional clinically positioned secondary supervisor. Personal communication with representatives of the McKenzie Institute resulted in this statement regarding conflict of interest: “The McKenzie Institute Education Committee is open to review of its programmes. Since its development, the McKenzie approach and the sub-classification system has been subjected to scrutiny by researchers, academics and clinicians alike. The system has been modified over time in response to clinical needs and research findings. Going forward it is always anticipated that revision will be required from time to time to ensure the McKenzie approach remains contemporary, continues to meet the accepted criteria for reliability and contributes to better outcomes for patients when the McKenzie approach is utilised. Critique of the diploma education programme will be acknowledged in the same vein”. There was no deceit of the participants about the purpose of the study or the methods I was using throughout. The findings were reported in a truthful manner and the participants were informed of the findings.

The Treaty of Waitangi

As this research originates in New Zealand, I sought to acknowledge ethical considerations in terms of Māori. The principles identified within the Treaty of Waitangi of partnership, participation and protection are applicable to all research. Collaborative partnership within qualitative research is the basis of coming to a shared understanding of an event or experience. Reciprocity within the research relationship was outlined for participants prior to participation to facilitate partnership. In terms of participation, within the research steps were intentionally taken so that participants could choose to participate, or not, knowing that their knowledge would be shared respectively inside of the study and that anonymity would be protected. Protection was also considered in terms of consideration and safety of participants’ culture. Cultural safety is the awareness and acceptance of difference, be that age, gender, occupation, socio-economic status, religion or ethnicity (Jungersen, 2002). The McKenzie Institute diploma programme is

offered internationally, as such the researcher interviewed across a broad range of cultures. All participants had the right to have their values, beliefs, and culture respected. During the interview process I was guided by the individual participants as to what made them comfortable

In consulting Te Ara Tika (2010), this inquiry fell under a mainstream research approach. As the primary researcher, I considered in what way did the research potentially have an impact on Māori and how would Māori potentially be included? While there was little real involvement of Māori throughout this research process, the findings or recommendations of the research may be appreciated by Māori health professionals engaged in or thinking of engaging in postgraduate study, as well as those developing post-professional education experiences for Māori.

Ensuring Trustworthiness

Evaluation of qualitative research quality is associated with the concept of trustworthiness (Morrow, 2005). Guba and Lincoln's (1981) trustworthiness criteria are recognised standards upheld as ideals for quality qualitative research (Morrow, 2005; Ryan 2006; Shenton, 2004). These criteria are credibility, dependability, transferability and confirmability. Use of these criteria was thought to be methodologically congruent with the post-positive approach of this study.

Credibility

A qualitative study is credible when the findings present "an accurate description of interpretation of the phenomenon, in that people who also share that experience will feel and recognize it" (Krefting, 1991, p.216). That is the implications or conclusions correspond with and make sense of the experience as the participants know it. The credibility of both the information presented and of the researcher is important. To account for the credibility of information all participants were given the opportunity to verify transcripts of their interview. The aim was that confirmation of an accurate representation of the interview had been denoted and that the participants were given a chance to address perceived errors. Undertaking a pre-suppositions interview to clarify and determine my own assumptions or bias, both personal and intellectual regarding the McKenzie Institute's diploma programme sort to give me credibility as the researcher. It helped me acknowledge coming to the research with an open mind but additionally as a graduate of the diploma programme with some familiarity. Peer debriefing added an

additional element to consolidate this study's credibility. I worked together with the supervisory team through regular discussions during the data collection and analysis. The peer examination ensured that my thinking, processes, and findings were exposed to impartial views, critique and challenges.

Dependability

Dependability can be seen to evaluate the quality of the integrated processes of data collection and data analysis. To assist in maintaining consistency of data collection, a semi-structured interview guide (Appendix D) was utilised, all interviews were conducted by the same researcher and each interview question was asked of all participants. Dependability is also thought of in terms of auditability (Mays & Pope, 2000). A study and its findings are auditable when reconstruction of events is possible. Documenting and reporting an audit path of methodological and analytic decisions during the research process has been made transparent in this research report and the application to the Ethics Committee. The reasons for undertaking the study, the research question, the choice of methodology and methods have all been outlined and explained.

Transferability

Given the sample size and consideration that most qualitative research is naturalistic as well as context specific, it was not intended that the findings of this study would be generalized. However, the concept of transferability may be relevant (Morrow, 2005). Transferability implies that while findings may not necessarily be fully applicable in broader terms, they may prove meaningful, useful or of benefit to specific groups in similar situations (Shenton, 2004). To enhance transferability of this study I have given a detailed account of myself as the researcher, the research context, and the research participants. By describing this, readers of the research can assess possible connections between elements of this inquiry and how it relates to their own contextual circumstances (Morrow, 2005). Although this study is concerned specifically with the McKenzie Institute's diploma programme the implications could be of use to the larger physiotherapy postgraduate student and teaching community.

Confirmability

Confirmability is the concept of neutrality with reference to the findings from the data (Guba & Lincoln, 1981). However, within qualitative research, it is recognized that the way in which data is gathered and analysed is grounded in subjectivity (Morrow, 2005). Morrow (2005) states that depending on the underlying paradigm employed in the qualitative research, subjectivity can be limited, managed or embraced. Within this post-positive study and because of my familiarity with the experience being investigated I have sought not to limit subjectivity entirely but to manage it with participatory consciousness. Undertaking processes of reflexivity through a journal and as mentioned previously supervisor debriefing helped keep a record of my reactions and emerging awareness of my thoughts, assumptions, and biases during each stage of the research process. It made me more cognisant of maintaining an inductive perspective that linked directly to the data, so as to fairly represent a descriptive detail of the participants' experiences.

Authors (Guba & Lincoln, 1981; Morrow, 2005; Morse, 2015) state that confirmability is also satisfied when credibility, dependability and transferability issues have been addressed. Therefore, the strategies outlined above in seeking credibility, dependability and transferability have also sought to consolidate the studies confirmability.

Summary

Systematic research aims to expand knowledge and understanding using established processes to support the research findings integrity. This chapter has given an overview of the research approach used in this study. I have discussed the paradigm chosen to guide the generation of knowledge, the methodology employed and my rationale for choosing this approach. Also outlined was the methods undertaken that aligned with and were congruent with a post-positivist qualitative descriptive research approach. Fundamental ethical considerations were included in the discussion and presented are the strategies employed to address trustworthiness and rigour within the research process. Chapter Four presents the voices of the participants and the findings of this study.

Chapter Four: Findings

Introduction

Cram (2012) states that research is about walking familiar paths again with more formal questions in mind to advance our knowledge and comprehension of a specific area of interest and is about re-presenting; that being the care we take when we tell what we have found. The goal of this qualitative descriptive research aligns with these aspirations by seeking to achieve greater insight and understanding into participants' experiences of undertaking the McKenzie Institute Diploma in Mechanical Diagnosis and Therapy and reporting their experiences. Chapter four presents the findings from the participant interviews. Participant demographic data is included to provide a snapshot profile of the participants. Using thematic analysis, three overarching themes emerged from the data: "Trust and Hope in the System", "Learning to fully Trust the System" and "Beyond the System".

Participant Demographic Data

Demographic data was collected from all participants (Appendix F). This included age, gender, year of graduation as a physiotherapist, the year participants attained both Credentialed status in MDT and the Diploma in MDT. Also noted was the location where participants had completed the clinical component of the diploma programme and what branch of the McKenzie Institute they belonged to. Of the nineteen participants interviewed eleven were female and eight were male. The mean age of participants was 41 years, ranging from 32 to 52. On average it took participants 8.95 years from initial graduation as a physiotherapist to become credentialed in MDT and 13.95 years to become a diploma holder. It appears that once participants had been exposed to the MDT system most progressed to the higher level of MDT education and competency within five years. From 2006 to 2015, the clinical component was offered at nine clinical venues around the world. Seven venues were represented in the data, Australia, Belgium, Holland, New Zealand, Scotland and the United States (Austin and New Jersey). Ten branches of the McKenzie Institute were represented from the existing 28 international branches with most participants coming from the more established branches within North America and Europe.

Theme One: Trust and Hope in the System

Mechanical Diagnosis and Therapy is a comprehensive system of assessment and management of musculoskeletal conditions. The system has a sequential learning programme that aims to enhance the competency and application of MDT principles. Participants had already demonstrated and invested a level of commitment to the system by completing the credentialing programme. Theme one, "trust and hope in the system" underpinned many participant's expressed feelings of why they decided to undertake the diploma programme.

Several participants emphasised both recognising and being certain about the MDT system as a continuum of learning, and by proceeding through that continuum, it would advance not only their understanding of MDT but also lead to further development and progression as a physiotherapist.

> *"I knew it was a consistent system with reliable results but after seeing Robin McKenzie at the conference I realised this is such a continuum and if I go through the diploma programme I can get to the next level." (Participant 19)*
>
> *"MDT is a big well of knowledge, learning and potential – it's up to you how much you want to take from that well to progress with it." (Participant 1)*
>
> *"For me when I was studying for the cred exam I had some instruction with a retired member of faculty …. and the information she gave me …. you think going through the cred process you're going to be at your maximum, but you realise this it is just the tip and there is a heck of a lot more to learn in the process. She stimulated that for me." (Participant 5)*
>
> *"I saw so many potential opportunities on multiple levels, clinical, administrative and teaching … that could come from continuing." (Participant 16)*

Underlying the premise that the continuum of learning would enhance development was the participants' explicit belief in MDT. Participants' belief came predominately from their own experiences of using MDT as credentialed clinicians and evaluating the value of it in their own clinical practice in contrast to other musculoskeletal approaches they had previously used.

> *"I had previous to McKenzie done all the Maitland courses and could never get it to work for me as a therapist and when I found the McKenzie Approach I felt oh, my gosh this is what I've been looking for. To finally find something eight years into my career that really worked for my patients was like hitting gold. I enjoyed the level of knowledge as a credentialed clinician and I liked the approach so much I just wanted to get as much knowledge as I could." (Participant 13)*
>
> *"I really liked what I learned during the credentialed courses, I had been through manual therapy and manipulation courses, but the McKenzie System had such a logic to it which as a clinician really appealed to me. I wanted deeper knowledge and more certainty with understanding." (Participant 8)*
>
> *"Wanted to get better at what I was doing, I wanted to improve my clinical reasoning and manual therapy skills while studying further something I believed in. I really saw the value in the McKenzie clinical reasoning and assessment. I had done a*

bunch of manual therapy courses and I didn't feel it that had given me what I needed, not enough." (Participant 9)

"I just had the feeling that this was the right approach for me as a therapist in the future and I think you can just get better by getting more specific in the training and just focusing on one thing and MDT was it. Manual therapy in isolation was never working for me. I had issues to feel and the palpation and MDT showed me a different way of looking at things and people and how to get people independent." (Participant 4)

Trust and belief also came from literature and research regarding MDT, as well as observation of diploma clinicians and McKenzie Institute faculty members providing clinical care.

"I liked having quality information and an evidence base that supports your decision making." (Participant 16)

"I valued and respected the clinicians around me who were using MDT at a higher level and the outcomes they were achieving." (Participant 15)

"Watching instructors much higher level with diagnosis and treatment made me believe I could get more from MDT." (Participant 17)

Additional to the explicit trust and belief in the system as being integral to pursing the diploma programme, participants also expressed hope. Hope in what they could attain from trusting the system. First and foremost, many of the participants expressed that they anticipated becoming a "better clinician". Being a better clinician implied that the participants were in some way seeking to achieve greater expertise in their MDT and physiotherapy practice. Being a better clinician was linked by some participants as achieving a higher level of knowledge and understanding of MDT.

"The system worked, and I wanted to know more about it …. I wanted more exposure to more research around MDT." (Participant 18)

"I just wanted to get as much knowledge as I could." (Participant 13)

"Really wanted to get the very best out of the system, to make sure I was understanding it to the fullest and using it as well as I could." (Participant 6)

"I wanted to gain a better understanding of the system…. I wanted a deeper knowledge and more certainty and expert understanding of how to utilise MDT" (Participant 8)

"I was looking for more advanced theoretical learning of MDT." (Participant 14)

Other participants associated becoming a better clinician and enhanced expertise with the competencies of efficiency and the ability to manage more complex patient presentations.

"I wanted to implement the system more efficiently." (Participant 1)

> *"I felt it would give me an improved ability to manage some of the more complex cases, those grey presentations that aren't as clear cut and a more rapid ability to classify patients." (Participant 17)*

> *"I felt I didn't know how to treat well enough the other sub-groups that didn't fit the derangement model. I wasn't seeing that many derangements and that was the issue I had with MDT and I just felt I could get better and quicker with classifying and managing those who weren't rapid responders". (Participant 4)*

> *"Wanted to know how to progress in more challenging clinical presentations, get beyond basic approaches used by novices, get to a more advanced competency level and treat my patients more efficiently and effectively." (Participant 7)*

Although being more efficient and effective may imply superior results as a clinician, only two participants explicitly correlated being a better clinician with improved results for the patient.

> *"I wanted to be a really good physio…. the diploma programme would help me be able to provide the best outcomes for the patient." (Participant 5)*

> *"I was seeking thinking at a higher level, wanted to be just a better physio so as to be able to give better outcomes for the patient" (Participant 10)*

Hope for credibility was also evident in the aspirations shared by the participants in stating that by completing the diploma programme they hoped they would become more credible to themselves. Two participants indicated that credibility to them meant being more confident in their own clinical practice.

> *"I was going into my own business and knew I needed to up-skill myself and be more prepared and assured of myself to take on whatever walked in the door in the role of a primary contact provider." (Participant 12)*

> *"I was working alone in isolation and wanted to be sure that I was doing the best I could, to develop and feel more confident and to not to have to consult so much with others." (Participant 3)*

Other participants perceived becoming more credible in relation to being more able to take on advanced professional roles in the provision of physiotherapy musculoskeletal care.

> *"[I] Was at a stage in my career that I was craving and needed to standout and be a more credible clinician in an advanced role, the cred process was a good stepping stone, but the diploma felt like the next step up and it would take me further in achieving this." (Participant 14)*

> *"I wanted more confidence with professional autonomy to work and think more independently as a primary care provider. I thought the MDT diploma would prepare me well to take on this role." (Participant 7)*

Some participants identified that attaining the diploma had wider reaching implications beyond their own individual credibility and they hoped and anticipated it could give them greater standing in their health care provision contexts.

"Case studies from credential training were indicating resolution of patients in 2-4 visits and I thought wow if you can accomplish that for patients then you stay viable and credible in a competitive market." (Participant 1)

"Healthcare system is changing to more value driven by quality and efficiency and I felt having the diploma would give me that and hold me in good stead to become a provider of choice." (Participant 7)

Of the nineteen participants, eleven expressed an interest in and passion for teaching and becoming an educator as part of their professional scope and career development. Within the MDT system, those that have attained the Diploma in MDT and completed a minimum of a further two years of clinical practice may be eligible to apply for the McKenzie Institute's Probationary Faculty Programme. There was a consensus of articulation whereby completing the diploma, the participants' hoped they would someday advance through to the faculty programme.

"One of my goals was to eventually morph into a faculty member…. I've always enjoyed the teaching component of physical therapy and my hope was with completing the diploma programme I could move onto the faculty programme." (Participant 13)

"Saw there was a potential and opportunity for teaching further down the line which complimented my current clinical role and part of what I enjoy doing." (Participant 16)

"Part of the bigger vision was the potential for progression within the Institute to move on to teaching down the line." (Participant 14)

"Another drive was eventually to get on the faculty programme." (Participant 10)

"I also wanted to teach the McKenzie Method" (Participant 3)

These eleven participants expressed their desire to become faculty as a personal aspiration however one participant also indicated the recognition for potential to provide opportunities for others.

"In my normal job I manage part of a physio department, I'm interested in staff development … and also looking to grow and expand our branch of the Institute… in doing the diploma and eventually if being good enough to move onto faculty …how could I create an environment and opportunities for others, my immediate staff at work and more broadly our branch." (Participant 16)

Theme one, "trust and hope in the system", describes the influences and expectations of participants undertaking the MDT diploma programme. Trust was articulated as a belief in the clinical utility of MDT. This trust had initially been established through the credentialing process, the evaluation of experiential use, empirical evidence and observation of diploma level clinicians. Participants viewed the MDT system as an assured learning continuum and anticipated that

participating further in the continuum would progress them both clinically and professionally. Hope in the system signified the desired consequences or outcomes that participation in the diploma programme might bring. Being a better clinician, credibility and the possibility of becoming an educator were highlighted as the central aspirations to be gained by placing hope in the system.

Theme Two: Learning to fully Trust the System

"Learning to fully trust the system" highlights the journey of the participants learning experiences whilst undertaking the diploma programme, along with their perceived challenges, development and evolution through the MDT learning continuum. Learning to fully trust the system is represented by three sub-themes Conscious Incompetence, Practice on Show and Expansion of Practice Insight.

Conscious incompetence

The four stages of competence are a learning model (Figure 2) grounded on two principles, one's awareness in learning (consciousness) including the feelings and emotions that relate to this and one's skill level (competence) (Adams, 2017).

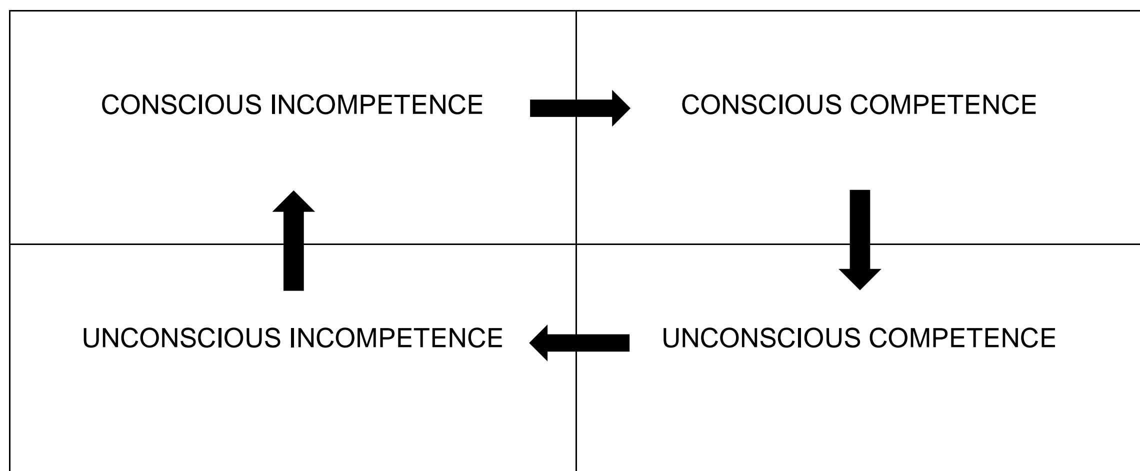


Figure 2: Competence Stages

What became evident from the data is that most participants, at some stage in their journey of learning to fully trust the system, acknowledged or perceived a level of conscious inadequacy

regarding their competence. Many primarily recognised this in relation to their understanding, proficiency and application of MDT.

> *"I knew there was still questions within me and about my clinical reasoning that I needed to explore further to get the answers." (Participant 8)*
>
> *"After completing the cred process, I had the feeling I wasn't putting all of the parts of MDT together well enough." (Participant 2)*
>
> *"I had the feeling I wasn't quite getting it yet and was missing some of the pieces." (Participant 11)*
>
> *"After a while as a cred therapist you tend to take short cuts, but they end up reducing your efficiency and effectiveness in using the system and helping the patient." (Participant 6)*
>
> *"I didn't realise I was lacking as a credentialed therapist and then going through the diploma I found I didn't realise how much I didn't know." (Participant 13)*
>
> *"I really thought I was fairly well prepared as a credentialed clinician but on clinical there was a lot I needed to develop and when they say that cred level is the minimal competency and an initial understanding of MDT, looking back that really rang true for me." (Participant 15)*

Participants also voiced an awareness of incompetence or uncertainty with regards to some of the learning processes required of them especially in terms of the masters' level theoretical distance learning component.

> *"It was the first time I had done any online learning and I don't think I was a good self-directed learner back then, so it was tough. I wish I had had a mentor or someone I could have reached out to, to help me. I felt intimidated and unsure in the distance learning environment …. in retrospect I could have gotten more out of it." (Participant 11)*
>
> *"Had been out of school for 14 years so the change from a traditional to e-learning environment took some accommodating and I found navigating the system initially difficult." (Participant 9)*
>
> *"I realised I needed to learn to question what I was reading and analyse articles more critically and then interpret their relevance." (Participant 9)*
>
> *"I was so far removed from research and critical analysis of the evidence and research it took time to get comfortable with it. Having been away from the classroom environment for so long I struggled with efficiency in sourcing articles and processing relevant information and the writing was challenging and difficult for me. I didn't have a concept of what was required for a masters' level essay" (Participant 14)*
>
> *"The differences in the educational systems was a little bit challenging, I recognised there were slightly different aspects in terms of expectations and thought processes for study at masters' level in my country versus internationally." (Participant 2)*
>
> *"In terms of the theory …. I recognised that I was not one who does well with writing, it wasn't a strong skill set of mine and I also realised I wasn't that into the literature previously." (Participant 17)*

Practice on show

When an individual opens themselves up for scrutiny, that person is in principle being put on show. All participants spoke about an aspect of their professional practice being put on show. While some experienced this during the theoretical component and the final examination, for the majority practice on show was associated with the experience of having their practice observed during the clinical component of the diploma programme. Whereas conscious incompetence relates to an individual's awareness of their own weaknesses, practice on show not only discloses this to others but goes further, to potentially expose unknown inadequacies and reveal areas of unconscious incompetence. Practice on show brought about periods of cognitive discomfort for many.

> *"I couldn't post early, and my thoughts had already been expressed by others. I wasn't sure if I should still be contributing and whether my contribution had value. I felt a bit vulnerable from that point of view." (Participant 14)*
>
> *"The viva was absolutely terrifying, and I was at lot less prepared for that format. I remember not being in control as much as I like to be." (Participant 12)*
>
> *"Being watched I felt insecure, I didn't know that part of myself and it felt strange to experience it." (Participant 18)*
>
> *"I had a very bad past experience on clinical at undergraduate level …. it was almost like bringing up that trauma again. Being watched again…. I was a little on guard about that." (Participant 15)*

This seemed more so for those participants who were experienced clinicians and had been practicing physiotherapy for longer. However, for others having their practice observed seemed familiar and comfortable.

> *"The constant supervision was initially awful, had been a fully-fledged physio for so long and then to put your-self on the line for critique was very confronting, takes guts to do that." (Participant 8)*
>
> *"I had to undergo a mind-set switch. It was like becoming a student again, challenging being supervised 1:1, I was more used to being the supervisor than the supervisee." (Participant 16)*
>
> *"I was fairly new out of physiotherapy school and we do a lot of observation through our training, so being observed in practice didn't bother me at all." (Participant 12)*

Although having their practice on show did bring about periods of unease for participants, without exception, all acknowledged that having their practice observed and on show was the central element that brought about practice change.

"In comparison to the theoretical it was by far the more transforming experience" (Participant 5)

"You need the constant supervision, observation and challenging to trust the system and progress, I couldn't have done it independently." (Participant 8)

"As a clinician the best experience I ever had, to have someone observe your practice and pick it apart … I found it very rewarding." (Participant 19)

"By far the clinical component was where I learnt more, to have the patients to learn from and to have someone watching you to point out where you're going wrong…. The clinical component was much more intensive, much more interesting and I enjoyed it more." (Participant 4)

"Although very challenging it was the high point of the diploma programme." (Participant 1)

"The value for the whole programme for me really came in the clinical." (Participant 11)

One participant had their practice on show videoed and although describing this as being more confronting than being observed by the clinical educators, also found it highly constructive for self-critique and reflection to initiate change.

"Scary as all hell looking at the evidence of yourself…. I gained a greater awareness of my practice habits …. body language, voice tone, words you use and having to justify why." (Participant 16)

Expansion of practice insight

Having undertaken the experience of the diploma programme, most participants recognized that in learning to fully trust the system, they had undergone a process of questioning and challenging the how and why of their practice, in order to achieve greater understanding. This process occurred predominately during the clinical component of the diploma programme and is represented by expansion of practice insight. Expansion of practice insight was regarded differently by different participants. Some participants articulated this process as a sequence involving their practice being broken down and then rebuilt to reveal and modify biases, misunderstanding and inconsistencies in the application of the MDT system.

"It was like boot camp… they have to almost break you down of your bad habits, so they can then build you up. I don't think I would have gotten to the point I got to if it hadn't been that tough love, break you of your old habits then get in gear and learn what you need to know." (Participant 13)

"It's like a house undergoing renovation where you had a perfectly good house that looked fine and it gets strip down to its studs then they rebuild it, it looks similar but structurally it's more sound." (Participant 5)

Others described the process came from having to critically explore and reflect on their previously established view of practice and in doing so, they brought an acceptance of new and revised understanding into their practice perspective.

> *"I was influenced by my prior knowledge and letting go of old ways was hard. It felt like learning how to drive a car in a different way like on the opposite side of the road. Familiar but uncomfortable in the beginning but the mentor helped me to identify how I could evolve." (Participant 18)*
>
> *"I learnt to unlearn behaviour patterns I had in the past. It took me 3-4 weeks into it …[I] was trying to trust the system and still trying to let go of my old way of doing things." (Participant 8)*
>
> *"It was a difficult internal process of loss of confidence in my practice, then re-defining and re-finding it again." (Participant 11)*
>
> *"Caused me to reflect more…. oh, I may not be as good a communicator as I think I am. To reflect more on presentation of self and change me, to think what about me and my practice can I change to make it better?" (Participant 15)*
>
> *"I became more critical of myself and sharper, less biased in the critique of my approach to management and treatment." (Participant 2)*
>
> *"The point of the programme was to expose me to ideas that were different and even uncomfortable, to challenge you so you learn and grow." (Participant 17)*

Petty (2015) states that transformation of practice and one's insight into what is required for transformation, often requires help from other practitioners. A key element for participants in achieving expansion of their practice insight was having their practice reviewed and evaluated. That critique on the diploma programme is predominately provided by the clinical educator. The clinical educator is a McKenzie Institute faculty member. Their role is to guide the development of the diploma candidate. It involves the process of building rapport, facilitating knowledge and skill advancement, giving feedback and formal assessment. The data revealed that while none of the participants took issue with the formal assessment processes, different clinical educators, how they engaged with the participants and provided feedback, had an influence on learning to fully trust the system. Some participants felt the learning environment encountered was less than nurturing and may have impeded development. (Note that many participants use the term mentor to refer to the clinical educator).

> *"Sometimes the feedback felt more like getting a statement versus having a chance to have a discussion with the mentor. It's harder to grow and learn from that type of feedback and teaching." (Participant 7)*
>
> *"A lot of the feedback was negative and if you don't have the positive to match it, you're very uncertain about where you stand. I learned so I can't say the environment wasn't supportive but, in my mind, it would have been better to have more constructive critique …. I felt like I needed more nurturing and more*

discussion around areas of weakness versus feeling like a confrontational or drilling situation." (Participant 5)

"Honestly, it was not as positive experience as it could have been. Did I learn? Absolutely. Did I get better? Absolutely. Did I accomplish my goals? Absolutely. Did it expose my weaknesses? Absolutely, so it did give me what I wanted." (Participant 2)

While others considered the educational approaches and environments they experienced as being supportive, encouraging and constructive.

"I felt like the mentors always had a master plan, they knew what they were doing, tough love to achieve the ultimate goal. The environment was not always warm and fuzzy, but I respect what the mentors did to help me achieve and how." (Participant 13)

"The feedback I got was, I felt, accurate, meaningful and increased my self-awareness as a clinician. Over the time I switched from being in a student stressed situation to having fun and it being a genuinely enjoyable and positive learning experience." (Participant 16)

"Supportive environment, the universe picked the right mentor for me to learn and grow." (Participant 15)

"The mentors have a job to do and their job is to make sure you come out more refined….so I always took the critique in that positive light to help me in my transition to be a better clinician." (Participant 1)

"It's intensive for the mentors having a student with them all the time. I think they handled that well. It was super. They spent an awful lot of time, giving a lot of feedback and were very supportive. You knew exactly where you stood….it was very clear and nice to have that clear direction." (Participant 12)

Two participants voiced being less than happy with their clinical learning journey and negotiated a change in their clinical educator. While it was highlighted by some participants that the differences between educators could be considered a challenge and did have the potential to create inconsistencies and frustration in learning experiences, most participants acknowledged having more than one educator also provided advantages.

"I was disappointed with the first mentoring situation, the disorganisation and the lack of structured feedback and not the supervision I thought I would be getting. The last few weeks with the other mentor in a new placement were perfect. I think I passed because of the last experience." (Participant 3)

"Sometimes the mentors were just not as available as they should have been, one was just not engaged. I did still learn but I bet my potential for learning could have been so much more if I had someone more interested." (Participant 5)

"There was a big difference between the mentors, too big when I compare their ability to teach. From each one you learn different things and I would advise to have two mentors, but the mentors need to have a consistent level on how to teach and their skill in being a mentor. With one mentor I didn't feel like I could have a dialogue. The other gave me more trust that I could do it and was more helpful in trying to help me identify how I could improve" (Participant 18)

“Having two mentors was initially confusing, they had different teaching styles. Once I understood what the expectations were from each it got easier…. I don’t know that they were aware of the differences themselves.” (Participant 12)

“The three instructors had different levels of participation and effectiveness in the mentoring role but for the most part it was a benefit to have the different styles.” (Participant 2)

“Both tutors were different and gave feedback in slightly different ways. I benefitted from having their slightly different emphasis in terms of teaching styles.” (Participant 6)

“The mentors were very supportive and challenging but gentle and each different in a good way. One was big picture, enthusiastic and passionate for MDT and the other was more a stickler for detail, more structured and able to break down the process into steps for trusting the system. I felt I had the best of both worlds having two mentors with different strengths.” (Participant 8)

“Sometimes there was differing advice between the two mentors but looking back it was just different people’s interpretation of the process and it made you have a greater appreciation of how the system can be approached by different individual perspectives.” (Participant 14)

Expansion of practice insight was further influenced by peer relationships and interactions. Peer learning was viewed as mutually beneficial through the sharing of knowledge, experiences and challenges. Participants acknowledged and valued peer collaboration as providing additional learning opportunities. Not only did they appreciate being exposed to alternative views and perspectives but also the support structure provided by their peers, especially during the clinical component. However, peer learning was not viewed as an essential element and participants who completed the clinical component independently did not express any perceived disadvantage in doing so.

“Interacting with students with different training backgrounds and different experiences exposed me to a wider view of physical therapy practice.” (Participant 17)

“It was interesting, different perspectives, some that had more recently graduated, and some had been out for quite a while and it was interesting to see the different views based around each person’s practice experience.” (Participant 9)

“It was a huge advantage to go on clinical with someone else. I learnt from the other student’s strengths and weaknesses and she had the opportunity to learn from my strengths and weaknesses.” (Participant 1)

“You got the opportunity to sit in and watch the each other and critique each other and as long as you are both open to that I think it made for a wonderful learning experience.” (Participant 9)

“Having someone with you was a pure advantage in every aspect, clinically and socially.” (Participant 4)

“I’m an independent studier but it was good to have someone walking the same path, good to discuss cases and good to have that moral support in challenging times. You get to work collaboratively and learn from the other student’s approach and it is beneficial watching a peer as well as observing the mentors and you start to emulate what they are doing well or at a more advanced level.” (Participant 7)

"Having someone I was comfortable with as a study partner made the whole experience exponentially more positive." (Participant 15)

To be eligible to sit the final viva examinations of the MDT diploma programme, candidates must have completed and passed both the theoretical and clinical components of the diploma curriculum. Participants understood the purpose of these final summative assessments is to ensure a consistent and reliable standard of MDT knowledge and skills across cohorts. Although confronting for some, participants viewed the final examinations as an essential part of their journey of learning to fully trust the system.

"[It] Was not the most enjoyable part of the process but it was the opportunity to talk about MDT its strengths/weaknesses and pros/cons, it was about telling them your views based on a combination of your experience, understanding and the evidence." (Participant 14)

"*It was the worst and best experience of my life. Retrospectively I felt like the format was not realistic. It felt false and it was testing your confidence versus your knowledge. Felt like more a test of your own insecurity. I was insecure and the exam feed into my insecurities versus testing my knowledge. I get why they use the format, but I thought it could be better. However ultimately I learnt from the experience." (Participant 15)*

"There were gaps in my learning still that were exposed." (Participant 2)

"The final exams cannot test you comprehensively, but they place emphasis on specific fundamental areas well. Questions were clinically relevant. It tested where I was still going wrong in some aspects. I got enough feedback to know where my deficits still were." (Participant 6)

For some participants, being required to demonstrate their expanded practice insight during the final examinations, served as an opportunity to affirm achievement of higher proficiency levels and show transition in competency through to conscious competence.

"Absolutely tests you to the level of diploma standard, its testing your ability to think under pressure which is what you have to do when you have a patient with you. I was surprised how challenging they were. Tests you have grasped the concepts and can apply them even if a curve ball turns up … have you developed the reasoning and patience to change/modify management." (Participant 16)

"Was good to have the final examinations, if I didn't have to do the exam I would have felt I haven't proved myself…. the exams held me accountable to be at the standard of the diploma qualification." (Participant 18)

"I felt my knowledge was checked, it was not a superficial exam and I learnt I stood up to the expected standard." (Participant 3)

"The examiners want to know you know the information well, that you have earned the title of diplomat and they were testing my clinical reasoning at that level." (Participant 13)

"You just have to be able to perform at a higher level and the final exams are a good representation of being held to a higher standard of thinking." (Participant 10)

The final examinations were not viewed as an end point but as part of the MDT continuum of learning beyond participation in the diploma programme. Some felt they would have liked additional feedback from the viva, to help direct ongoing learning while others drove future learning from their intrinsic understanding of where their practice now was and how they wanted it to progress further.

> *"Post examination feedback is an area that can be improved. Was curious about the specific level I was working at and what could be improved going forward." (Participant 18)*
>
> *"Would have like to have known where I performed well and where I didn't perform as well. Without that knowledge how could I view the exams as more than just a point in time versus a tool for further learning." (Participant 16)*
>
> *"More formal feedback post exam. Would have like to know what I did well, and did I just pass, or did I have a good proficiency also what were the areas that I needed to continue to refine for the future." (Participant 13)*
>
> *"I felt although I had been successful, I needed additional learning to further improve and I sought those experiences out myself after the diploma." (Participant 5)*
>
> *"After the diploma final exam, it took about one and a half years to get myself to where I wanted to be. Over time using what you learnt and making sure you used it in your everyday practice." (Participant 4)*
>
> *"After completing the exam, I felt I had the responsibility to continually practice at a higher level, to focus on continual learning and stay committed to advancing my MDT skill set." (Participant 17)*

The three subthemes of conscious incompetence, practice on show and expansion of practice insight represent the processes that participants described in learning to fully trust the system. There were both disparities and commonalities in what was shared by participants regarding their diploma educational experience. Within the process, most identified and believed that their practice competency was deficient in some aspect. For some this came prior to participation in the programme, for others it came during. Opening up their practice to continual critique proved pivotal in participants being able to achieve a sense of moving forward through the competence stages. Participants also articulated that collaborative learning was important for creating critical understanding and reflection around their practice knowledge and behaviours to facilitate practice change. For many participants, completing the diploma programme did not signify an end to their learning journeys but was viewed as part of an ongoing learning continuum.

Theme Three: Beyond the System

The overarching purpose of the McKenzie Institute's diploma programme is to provide participants with the highest level of competence in the theory and practice of Mechanical Diagnosis and Therapy (MII, 2017). It aims to challenge participants to develop skills in accessing, understanding and evaluating research, promote critical analysis and clinical reasoning skills, refine interpersonal and communication skills and foster a greater awareness of participants' professional responsibilities, including legal, ethical and cultural issues (MII, 2017). As outlined in theme one "trust and hope in the system", participants also had individual pre-conceived expectations in undertaking the diploma programme. The theme of "beyond the system" represents what "learning to trust the system" has brought to participants, in terms of perceived consequences and outcomes, following completion of the diploma programme. Beyond the system is represented by three sub-themes: Beyond the Mechanical, Beyond being a Clinician and Communities of Practice.

Beyond the mechanical

The basis of Mechanical Diagnosis and Therapy assessment is to evaluate the evidence of the patient's narrative, as well as their response to repeated movement and static positional testing, to classify the patient into a sub-group and then manage according to the sub-group determination. Although the movement testing forms a substantial component of the patient assessment, the majority of participants recognized that the most significant change in their practice had come not only from an improved understanding of the procedural elements of the mechanical assessment but more so from an enhanced ability to engage in deliberate patient centred practice, to better analyse and understand their patient's narrative to inform clinical decision making.

> *"It broadened my horizons clinically in my interactions with others, my communication with others. Exposure to different ways of communicating has given me more tolerance for difference and the realisation I needed to make behaviour changes on my part, listening more and talking less." (Participant 16)*

> *"What really changed is that I got better at being able to make an overall evaluation of the patient from both verbal and non-verbal communication and above anything else tailoring management for the individual. Tweaking what I found in the assessment to give management that is what the patient truly needs." (Participant 14)*

> *"How my practice got better was in communication and to actively listen more. I got better at delivering education to change patient behaviour. It is a skill to learn*

that…. it's a huge way to change your practice. It caused me to reflect more on me and if I see a patient and it doesn't go well, what about me can I change to make it better." (Participant 15)

"I became more motivated as a physio to explore with the patients, to get more clues from them and get more out of them in their participation in care." (Participant 18)

"It taught me how to better understand all facets of a patient's presentation, to challenge the patient to work together through problem resolution and to become more thorough with patient education." (Participant 13)

"I became more relaxed in my approach, more confident to explore more with the patients, sharing of beliefs to help solve their issue and spending more time with the patient educating, so they understand what we are doing." (Participant 6)

"I now listen to my patients more, focus on their fears, needs and education, creating a therapeutic alliance." (Participant 11)

"I don't think I realised the value of the education I was receiving until later … in how it changed me as a clinician. How it gave me the mind set of learning more from the patient and the clinical interactions and experiences with patients." (Participant 17)

"Communication and patient education is now my point of difference, I can use reassurance and better explain what the problem is and how the patient has their own tools for management. It's more about patient empowerment." (Participant 3)

Participants also expressed that another change in their clinical practice had come from de-emphasizing the treatment aspect of their practice and focusing on maintaining a continual analytical evaluation emphasis during their patient interactions. They identified that aspects of their learning became less about procedural skills and more about becoming a critically reflective and responsive practitioner.

"I realised that to be effective I need to be in the mode of continual assessment all the time to fully evaluate what might be the best way forward with an individual patient." (Participant 17)

"So, I guess I now had refined tools about how to really assess a patient. It was less about treating the patient and more about looking at the assessment of the patient and what was happening today, what were their baselines, how had they changed, are we on the right track with things" (Participant 13).

"It has made me view every patient contact as an evaluation, assessing and trying to understand before progressing onto treatment." (Participant 7)

"It has made me more questioning. What can I do more to clarify the picture, what else to we need to look at to get the answer. It's about going back, checking, trying to figure things out and understanding versus always having the answer and progressing to treatment immediately." (Participant 6)

A further component to change, voiced by participants, was attaining greater confidence and efficiency in their MDT and physiotherapy practice. Being able to more rapidly identify patients

who were not appropriate for physiotherapy or who required additional support beyond movement-based interventions.

> *"I am quicker to identify those people who I can't help and direct them where they need to be." (Participant 12)*
>
> *"I became better in relating to patients, a better educator and better patient advocate in helping the patient negotiate through the medical system. I am better at the triage of patients to the correct clinical pathway….in that if their final stop isn't with me other care avenues become simpler for them, with me advocating for them." (Participant 17)*
>
> *"I was more confident to determine when I couldn't help someone directly and get them to the most appropriate person in the health care team." (Participant 11)*
>
> *"I realised who I can and can't manage. I can't help everybody there are those patients that need expertise beyond my skill set." (Participant 10)*
>
> *"My confidence in working with more challenging patients in terms of psychosocial issues versus a predominately mechanical presentation has improved." (Participant 5)*
>
> *"I've sharpened my ability to recognize even quicker the need to work on psychosocial input, to promote patient's ability to engage in management." (Participant 16)*
>
> *"Understanding issues around yellow flags and understanding how to approach those patients who have psychosocial issues was the greatest thing I learnt from a theoretical stand point. Understanding the research behind how to manage these issues and not making assumptions about these patients." (Participant 13)*
>
> *"The scope of MDT to address the psychosocial issues for patients was highlighted for me during the diploma and how we manage those patients is a big part of the learning I have now brought to my practice." (Participant 4)*

Improved academic acumen was referred to by some participants as a defined difference in how they viewed their physiotherapy practice knowledge following the diploma programme. Now being able to critique literature and integrate this into their clinical reasoning and management decisions.

> *"I use my improved ability to read, analyse, assimilate and critique evidence to support my thinking. If you're going to have a point of view you need to be able to justify it and also not just look at evidence that supports your bias but to look at things more broadly." (Participant 16)*
>
> *"Definitely now I am more confident in processing information and more versed in keeping up with the literature to use it as justification for my practice." (Participant 15)*
>
> *"Acting as a professional in the wider team, I feel more confident to defend MDT and my practice with relevant research or literature to support my views." (Participant 5)*

Beyond being a clinician

Participation in the diploma programme also became a driver for change and development beyond being a clinician. This development was articulated in terms of both career progression and personal growth. In terms of the career aspect this related to expansion of professional scope outside of direct patient care. For some participants' expansion of scope related to undertaking further post-graduate study and exploration into becoming active researchers.

> "*I recognised that I was very motivated to progress onto further study and needed to look for further avenues to grow." (Participant 7)*
>
> *"Completing the diploma, I wanted to teach the method, it didn't happen with the Institute, but it pushed me onto further study. With my understanding and use of the scientific literature being more in-depth and looking more at the research it helped me progress onto doing my own research and ultimately becoming a professor and educator within a tertiary environment." (Participant 3)*
>
> *"I progressed onto further study, I still had a thirst for more knowledge and the diploma was definitely a stepping stone …. It helped me find something I was passionate about researching and to continue through to attaining my Masters." (Participant 8)*
>
> *"I'm progressing forward with a specific patient population…. I'm progressing with research….to change the model of care for this group it has to been done through research. I'm trying to be a change agent for this group and an advocate." (Participant 2)*
>
> *"After the diploma opportunities for involvement in teaching and research opened up for me." (Participant 16)*

For others it encompassed incorporating an educator role to their scope of professional practice.

> *"It has allowed me to progress within the McKenzie Institute with more involvement in education, it has given me lecturing opportunities at other institutions and it has allowed me to be better at improving the growth and advancement of other clinicians especially at undergraduate level." (Participant 14)*
>
> *"It gave me the opportunity to move into clinical education, giving me a wider scope and perspective in my role as a physical therapist." (Participant 11)*
>
> *"Having the diploma pushed me towards more mentoring and leadership roles and greater involvement with the Institute and to represent the Institute in the wider physical therapy context at national conferences and to educate others about MDT at executive position level within the profession." (Participant 19)*
>
> *"The diploma has allowed me to progress into teaching with the McKenzie Institute along with other teaching opportunities and speaking engagements. It has made me think about pursuing a transition to academia." (Participant 9)*

For three participants enhanced scope involved consideration of and transitioning towards becoming self-employed business owners and managing the challenges that accompany this.

> *"I would never have considered opening my own practice in the past and that is something now that is a real possible reality." (Participant 13)*

"*As a result, I have been able to branch out and do other things, I don't think I would have had the confidence to open my own clinic if I hadn't had done the diploma programme. I felt that I could now do it on my own." (Participant 9)*

"Having knowledge of a logical system has helped beyond patient management in opening my own business. I use the assessment, diagnosis, treatment and outcomes model and system for business issues and problem resolution. It has allowed me to develop a consultancy business using these principles for areas beyond physiotherapy and patient care." (Participant 12)

Personal development and growth may come about from any activity that enhances an individual's awareness, identity or quality of life. Both suggest a notion of change. While none of the participants were explicit in their desire to develop personally as they undertook the planned process of advancing as an MDT clinician, growth across the personal domain was described as an additional aspect to come about from participation in the diploma programme.

"I've become more reflective as a person in general." (Participant 16)

"I think in general I am more intuitive with people, have a greater attention to detail and am less defensive." (Participant 14)

"Has made me more open to change and whatever that may bring." (Participant 15)

"It was a strong experience that in turn made me personally stronger. It has made me have greater strength in dealing with the challenges of any process whatever that maybe". (Participant 3)

"Since completion I have grown in my ability to be more questioning across all aspects of life. I have changed my expectations and hold others in my life including family and my children to be more independent and more self-reliant." (Participant 9)

"Can't go through all of that without also changing personally, it has made me more open, more accepting of others views and made me take a bit more time for things I care about." (Participant 8)

"I realized it has exposed me to so much more than MDT, it gave me an all-round development within myself, widened my horizons on a personal level." (Participant 1)

"Made me more aspiring." (Participant 12)

Communities of practice

A community of practice can arise in any domain of human endeavour (Farnsworth, Kleanthous & Wenger-Trayner, 2016). It has been defined as "groups of people who share a concern, set of problems or passions about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger, McDermott & Snyder, 2002). While not using the specific term community of practice many participants expressed that by completing the

diploma they had become more legitimate members of an international group of likeminded individuals, that they could continue to engage with to further progress their MDT learning journeys.

> *"I have so many links…. now I have a community of people willing to help you out in any way they can to grow and learn and you really get embraced by the McKenzie family. It has definitely opened up more involvement with the Institute" (Participant 5)*
>
> *"There were always things I wanted to do as a credentialed therapist…. but I feel like having the diploma helps me to have a certain level of knowledge not only amongst my own MDT co-workers but gives me access to more people and opportunities within the wider MDT group to do more now." (Participant 13)*
>
> *"I'm still in a study group with people from the diploma….it has also given me connections and a culture or network that has facilitated the capacity for further learning." (Participant 15)*
>
> *"It improved my professional relationships in the MDT community." (Participant 17)*
>
> "*I've had the opportunity to meet some really good people from all over the world …. the community is an extraordinary opportunity to learn to understand from other perspectives in a global context." (Participant 2)*
>
> *"I have an international community of likeminded clinicians. The generosity of spirit in the MDT community…. people are passionate and are paying it forward to others coming up through the learning stages." (Participant 7)*
>
> *"I think the MDT community is a very sharing and open community. From start to finish there has always been a positive push towards helping each other, regardless of stage you're at and I think that is quite unique in physical therapy. It's amazing to think you can meet people from different countries or completely different circumstances and have so much in common with them and maintain those relationship." (Participant 9)*

Additionally, some participants stated that having the diploma exposed them to new and broader communities of practice beyond MDT.

> *"The diploma helps you appreciate your limitations and it made me engage more with people who specialised in chronic pain, because that's one of the areas I wanted to know more about. It aided and opened up my dialogue with pain clinic and pain specialist physiotherapists." (Participant 6)*
>
> *"It opened up professional learning networks not only within MDT but also with the wider musculoskeletal physiotherapy community." (Participant 16)*

A group of participants sought out, via a change in work environments, a more locally grown community of practice that would further facilitate and enhance their MDT practice.

> *"The diploma was the catalyst to seek a different work environment that supported and matched my use of the MDT management philosophy. It was now easier to practice using the MDT system and progress with it in an environment that aligned. My old work didn't value my change in practice as it reduced patient contacts and billing." (Participant 7)*

"I changed jobs to be in an environment with other and more experienced MDT clinicians. It was more valued and also if you don't have other people around you can't achieve that higher level of skill….to learn from, to take it to the next level you can't really further progress with MDT unless you have that other person there with you, to help you up." (Participant 2)

"I took a position with a group that was specifically seeking MDT clinicians. Changing to that position was firstly to be in a comfortable MDT environment but also to be part of a group that was trying to make MDT clinicians the front- line practitioners for musculoskeletal care and that to me is something I am passionate about." (Participant 17)

The above highlighted the challenge that participant's change in practice was not always supported by existing work communities they were part of. Further, some participants identified a sense of frustration with their existing communities of practice not acknowledging their more advanced level of learning or valuing their change in practice. However, most viewed this challenge as short term, seeing beyond the immediate context and the potential for wider benefits in the future.

"Within my health system context there is minimal recognition from the wider physiotherapy community, they don't understand the MDT education system so there is a lot of misunderstanding and under appreciation of the value in the diploma qualification. You definitely don't get as much recognition out of it for the amount of effort you put in. That's a problem with other's perceptions of the McKenzie system, it appears to others as so simplistic and they ask, why did you spend so much time studying it? But it has been something that has carried and progressed my passion for physiotherapy again" (Participant 8)

"The MDT diploma is not recognised in the wider physiotherapy community, it holds no title at all. There is no extra remuneration. For you as an individual, you do it to improve yourself, but there is no other recognition beyond this in my clinical setting and health care environment. Therefore, it takes time to see the benefits beyond those you achieve as an individual." (Participant 18)

"There was no recognition of the diploma, but I stopped bothering about that and decided just to focus on my patients. Patients know they are getting better, referrers start to recognise you are doing a good job. I just started letting my outcomes speak for themselves." (Participant 12)

"In a fee for service environment having the improved efficiency with patient management is not always regarded as being good…. but the emphasis shouldn't be what I am billing per patient but about getting them better more effectively. It should be about outcomes….in comparison now to previously my outcomes are like night and day. Now I love my career, I feel like I am extremely passionate about it versus if you had asked me eight years ago it was just a job that I went to every day." (Participant 13)

"Post diploma I became more efficient, so from a business model in a fee for service arena I needed a higher turnover of new patients to make my practice financially viable. This proved difficult initially but long term it has proven beneficial with less time needed on marketing as patients and their outcomes do my advertising." (Participant 9)

"MDT is not a high profit margin from of physical therapy and because of that our efficiency of care becomes a challenge for a business model. Can you create enough volume to keep your business going? But long term, the way health care provision is going, it will become more about value per dollar." (Participant 2)

"There has been non-recognition within broader terms of the physical therapy environment. My work environment has recognised it as providing an advanced skill set, but in terms of remuneration it has not provided any opportunities. MDT is commonly well known but there is little understanding of the distinction between levels of education and the amount of work that goes into undertaking the diploma programme. In the wrong setting i.e., fee for service business model the diploma in MDT could be seen as a detriment for the employer. However, health care is changing to more value driven and the diploma will give us an advantage with greater quality and efficiency in care." (Participant 10)

While some participants outlined that they still maintained links with some from the MDT community, what emerged from the data was the expressed need for the McKenzie Institute to foster continued and better connections with diploma holders post programme completion. Indicating the desire for ongoing support for further learning as well as greater utilisation of diploma graduate skill sets within the MDT community.

"Afterwards I wasn't so sure where to go? [I] Was not sure where to take myself further in the MDT system, what do I do now? .... It would be really good to have something after the diploma, where people are just given information, or sat down or talked to by maybe their supervisors and see where you want to go from here, what pathways there are, if there are clear future pathways and if not to develop some, otherwise that sparkle and passion just fizzles out. Because if nothing is coming forward it might give people the feeling maybe they are not worthwhile to be taken further and contribute more." (Participant 8)

"I do wish there was more follow up post diploma. Something for diplomats to have input, get newest ideas, make sure we are staying updated and more informed about the Institute, how we can contribute and what they are working on? If you're faculty you know all of that, but if not, you're not in the loop. I also wish they would utilise diplomats better, have us more involved and come up with ways for us to further help. I guess supporting diplomats to be part of the teaching community outside of the faculty pathway. (Participant 11)

"I think the Institute they are working on getting more opportunities for those who have completed the diploma….in terms of trying to find a place for people who want to continue to be valuable but either don't want to do faculty or aren't qualified to do faculty. I know the Institute is working on that, but they could also do a better job I think. They could also do a better job at making sure our skill sets stay up to date because there is a big difference for example in performing and teaching techniques…. if we are going to continue to represent a reliable system we need better communication for and amongst diplomats. I would like diplomat only workshop where they actually quiz and critique us for clinical reasoning and ensure we represent the Institute and its more contemporary thinking well." (Participant 19)

Beyond the system and its three subthemes expresses what the participants identified as the meaningful implications of what undertaking the MDT diploma programme has brought to them. Beyond the mechanical highlighted that practice change was less about the movement components of the MDT assessment and more about the capacity to learn from and with the patients, the participants improved ability to critically evaluate their own practice, as well as

greater comfort with understanding and interpreting empirical evidence. Beyond being a clinician outlined the scope of practice expansion that participants experienced along with growth across the personal domain. Opportunities and challenges were also articulated in respect to communities of practice. Communities of practice highlighted that undertaking the diploma had exposed participants to wider and new groups for continued learning but that their expanded knowledge and skill set may not always be recognised or valued within existing communities of practice.

Summary

Three overarching themes emerged from the data: (1) “Trust and hope in the system” – trust was articulated as the belief in MDT. Participants viewed the MDT system as an assured learning continuum and anticipated that participating further in the continuum would progress their clinical ability and professional development. Hope in the system signified the desired consequences or outcomes that participation in the MDT diploma programme might bring. Being a better clinician, credibility and the possibility of becoming an educator were highlighted as key aspirations of placing hope in the system. (2) “Learning to fully trust the system” – described the participants learning journey. This encompassed their perceived challenges, development and evolution through the MDT learning continuum, which brought about expansion of practice insight and facilitated ongoing practice transformation. (3) “Beyond the system” – expressed what “learning to trust the system” has brought to participants following completion of the MDT diploma programme. Participation became a driver for change and development beyond the mechanical, beyond being a clinician and beyond the individual.

Chapter Five: Discussion

Introduction

This qualitative descriptive study set out to explore the experience of physiotherapists undertaking a specific course of postgraduate musculoskeletal study. The focus of my inquiry was guided by the research question: "What has been the experience of and impact for physiotherapists participating in and completing the McKenzie Institute's Diploma in Mechanical Diagnosis and Therapy (MDT)?" The aims of the research were to explore individual's motivation for participation in the MDT diploma programme; to provide insight into the experience of participation in MDT diploma programme across each component; to identify the effect of having this level of MDT competency on clinical and professional development; and to explore any opportunities and challenges presented to participants following completion of the MDT diploma programme. In investigating such a question, there is also an opportunity for the McKenzie Institute to consider what might be done differently in future development and delivery of the diploma programme. The previous chapter presented the findings relating to three themes identified from the voices of the participants: "Trust and Hope in the System", "Learning to fully Trust the System" and "Beyond the System". This final chapter considers these three themes in relation to previous research, prior to a discussion of the implications that might then be drawn. Strengths and limitations of the study will also be considered.

Relationship between the findings and the Literature

Trust and hope in the system

Trust relates to a belief in the reliability, surety or ability of an entity either a person, a thing or a process. It can also imply a confident expectation or hope of an outcome. Musculoskeletal physiotherapists are exposed to numerous models or systems of how assessment and management of patients may be structured, Mechanical Diagnosis and Therapy (MDT) is one model. Trust in MDT as an assured continuum for learning was evident in why participants chose to participate and progress through to the MDT diploma programme. A learning continuum scaffolds complexity and competency in skills from one level to the next (Chambers, Thiekotter &

Chambers, 2013). This scaffolding is evident within the MDT education framework; the participants of this study had foundation knowledge in the MDT system from completing the credentialing level programme and acknowledged that their MDT learning was an ongoing process. Trust in the system was explicitly linked to preconceptions from their own practice evidence, observing the practice evidence of those with higher levels of MDT competency and evaluating empirical evidence. That trust in MDT translated into hope in the system. Jacobs (2005) states that hope, within education, empowers and helps move us forward. Hope is consciously thinking about the potential to transform and create opportunities and allows us to imagine what might be possible (Jacob, 2005). Hope in the MDT system brought forth what motivated participants and what participants believed might be possible if they progressed further through the MDT learning continuum.

Consistent with findings from previous studies (Ahuja, 2011; Chau, 2012; Glover et al., 2008; French & Dowds, 2008; Ryan, 2003), the participants expressed that motivation to progress onto further MDT postgraduate study had both extrinsic and intrinsic parameters. Greater credibility, for advancement within the physiotherapy profession and acknowledgement within the wider healthcare team, were identified by the participants as extrinsic motivators. This aligns with findings of prior research looking at postgraduate study in nursing and physiotherapy (Chau et al., 2012; Constantine & Carpenter, 2012; Gerrish, McManus & Ashworth, 2002; Gunn & Goding, 2009, Stathopoulos & Harrison, 2003). Credibility was also cited as an intrinsic motivator, with some participants hoping they would become more credible to themselves. This credibility to self was articulated in the desire to achieve greater clinical expertise and become a better clinician. Gunn and Goding (2008) and Chau et al., (2012) in their research found similar findings, with improved clinical expertise also named as a dominant intrinsic motivator for undertaking postgraduate musculoskeletal study. Prior to commencing the programme, participants understanding and perceptions of what being a better clinician entailed were predominately modelled around having a greater theoretical and empirical knowledge base, greater efficiency around clinical decision making for patient management and improving outcomes for patients. These suggest some preconceived understanding of what musculoskeletal practice expertise is.

Another intrinsic driver was the expressed desire to expand their professional practice scope, which again echoes previous findings (Chau et al., 2012; Glover et al., 2008; Perry et al.,

2011; Ryan, 2003). This is consistent with the view that most musculoskeletal clinicians who wish to progress onto enhanced roles understand the need to undertake postgraduate level study, to achieve consideration for these roles (Green et al., 2008; Gosling, 1999; Stathopoulos & Harrison, 2003). What differed in this study was the explicit direction that most of the participants hoped this expansion of professional practice scope would take. The majority of participants expressed that by completing the diploma they would be better positioned to progress onto a faculty educator role within the McKenzie Institute. Although it has been recognised in previous research (Green et al., 2008; Gosling, 1999) that a potential outcome for those that undertake postgraduate musculoskeletal physiotherapy study is to transition into education, it has not previously been documented as a primary motivator to undertake study at this level.

Traditionally, progression onto education roles within physiotherapy implied that one moved from a clinically based scope of practice into an academic career (Gosling, 1999; Hurst, 2010; Murray, Stanley & Wright, 2014). The McKenzie Institute, as a provider of postgraduate musculoskeletal education, requires that faculty maintain a minimum of 800 hours per year in direct patient care, to ensure they continue to be exposed to the evidence of the patient, in teaching and utilisation of the MDT system (MII, 2017). Developing pedagogical knowledge and skills is also an obligation, however, participation in research and publication activity, although prevalent and highly advocated, is not a current requisite. Taking into consideration that most participants wanted to be a better clinician and the strong emphasis on maintaining a clinical role put forth by the McKenzie Institute's teaching requirements, it is postulated that both are contributing factors to participants seeing the McKenzie Institute's pathway as a potentially more desirable transition into physiotherapy education versus following the more conventional, predominately academically focused routes. Additionally, Hurst (2010) highlighted that making the career transition from a physiotherapy clinician to a physiotherapy educator is a process that often requires disengaging from a previous role and taking on a new professional identity. Therefore, it is likely that in seeking this potential pathway into physiotherapy education, the participants highly valued continuing as practicing clinicians and were not ready to disengage from this. Becoming an educator was viewed as supplementary to participants professional role development versus their wanting full transformation of professional identity.

Learning to fully trust the system

Although trust and hope in the MDT system were evident, it was clearly identified by participants that at some level they recognised that they were limited in their capacity to fully trust the system. Learning to fully trust the system revealed the participants' journey of knowledge acquisition and the processes that facilitated this as they progressed through the diploma programme and beyond. In commencing their learning journey, many participants consciously understood that their competency levels in the application of MDT were lacking. This perception of clinical inadequacy is not unique to this research and has been reported previously, as part of the initial phase of development in undertaking physiotherapy musculoskeletal postgraduate study (Constantine & Carpenter, 2012; Perry et al., 2011; Petty et al., 2011). In contrast to previous studies, participants of this study did not voice any feelings of inadequacy in terms of their professional standing amongst physiotherapy peers. However, they did allude to the fact that they recognised other MDT trained clinicians were more competent in trusting and using the system with greater ease, understanding, and skill. Fully trusting the system was about being able to perform at the demonstrated levels participants had seen from more expert MDT clinicians, as well as achieving the patient and professional outcomes these more expert MDT clinicians had realised.

Awareness of incompetence and uncertainty was highlighted over both the theoretical and clinical components of the diploma programme. In relation to the theoretical component, many participants expressed reduced familiarity with using an electronic web-based learning environment as an initial hurdle in this aspect of their learning journey. Previous research regarding physiotherapy musculoskeletal post-graduate study (Constantine & Carpenter, 2012; Green et al., 2008; Glover & Howden, 2009; Perry et al., 2011; Petty et al., 2011; Rushton & Lindsay, 2010; Stathopoulos & Harrison, 2003) has not focused on programmes that deliver content via an e-learning platform therefore no direct comparison can be made. However, Peytcheva-Forsyth (2014) has noted a major consideration with using e-technology is that students may have limited comfort and experience in navigating and contributing in this learning context. The demographics of this study's participants showed that most would have been out of an educational setting for some time and that their previous learning experiences predated online

learning and teaching technologies. Student vulnerability, fear of visibility and isolation has also been cited in the literature as potential barriers to effective learning via the use of e-technology (Peacock & Hooper, 2007; Peytcheva-Forsyth, 2014; Reese, 2014). Feelings such as these were also evident in the description provided by some participants of this study. Reduced ability to critically analyse and evaluate current research and literature was another area of incompetence identified by participants. Some also felt challenged in their ability to synthesize information in the summative written assessments. Returning to study can bring challenges for mature students and this finding is consistent with previous findings within the literature (Conneely, 2005; Perry et al., 2011; Petty et al., 2011, Shanley & Lambon, 2016).

The most transformative experience in learning to fully trust the system occurred for all participants during the clinical component of the diploma programme. Experiential learning with direct observation and feedback from a McKenzie Institute clinical educator not only highlighted for participants their conscious incompetence but also called attention to their unconscious incompetence, giving them greater insight into their practice. This enhanced insight, facilitated by the mentor, enabled movement through the stages of competence, progressing towards the level of conscious competence and participants being able to understand how to fully trust the system. Conneely (2005), Furze et al., 2016, Perry et al., (2011) and Petty et al., (2015) have previously indicated that in postgraduate study, direct observation of practice and having your practice on show, is pivotal and the predominant factor in the development of greater clinical practice awareness and greater clinical expertise. It provides the potential for a more comprehensive understanding of practice via cognitive scaffolding from structured collaborative assistance (Petty, 2015). The findings suggest that most participants in this study felt challenged to reflect on, critique and evaluate both their clinical knowledge and practice, then reconceptualise how it could be developed, changed or enhanced. Central to achieving this was the learning environment and feedback participants were exposed to during the clinical component. With respect to these parameters, this study identified inconsistencies and contrasting experiences amongst participants.

Effective learning environments involve an element of trust (Schupbach, 2012). Inherent in that trust is that students will be exposed to a climate of support where they are able to explore and reflect on their practice without concern of being judged (Schupbach, 2012). In this study,

some participants cited clinical experiences which they felt did not facilitate collaborative or optimal learning nor enhance trust, while others felt their clinical encounters were supportive environments of mutual collegial respect which not only promoted open dialogue for learning but promoted further trust. This dichotomy of experiences in clinical education has previously been revealed in the findings of Petty et al., (2011) and Strohschein et al., (2002). Strohschein et al (2002) put forth that contributing factors for disparity and inconsistencies in clinical experiences may be due either to an absence of a collective philosophy for clinical education or in some cases, the effectiveness and characteristics of the clinical educator.

The McKenzie Institute does have an underlying ethos within their education programmes which align with the principles of adult education and the pedagogical foundation of social constructivism (MII, 2017). It also has clearly defined parameters, direction, and expectations in terms of content and delivery, through each component of the diploma programme (MII, 2017). This demonstrates, at a strategic level, an understanding that learning is a social process and a product of environments which incorporate elements for successful scaffolding during the learning journey (Chambers et al., 2013). Therefore, it is considered that the contrasting experiences identified in this study are less attributed to the organisational level and more likely to have come about due to differences between clinical educators and the learning environments established. In agreement with Ernstzen, Bitzer and Grimmer-Somers (2010), most participants appreciated the exposure to alternative opinions and interpretations of trusting the system, that having access to more than one clinical educator afforded. However, the findings also clearly brought forward that some participants doubted the educational skills brought by some clinical educators to the clinical practice teaching context.

The McKenzie Institute Education Committee appoints McKenzie Institute faculty members to undertake the role of clinical educators within the MDT diploma programme. Faculty members are deemed expert clinicians and as educators are initially primarily involved in group instruction educational situations. As such, their development as educators is targeted for this and may influence the manner in which they conceptualise and provide education in the clinical context. It is therefore worth considering if the skills required by a diploma clinical educator differ from those required for group instruction. Steinert (2004) identified qualities of an effective educator in the group context that included personal attributes and content knowledge. However, the primary trait

was that of being a good facilitator for group dynamics and the ability to promote a collective problem solving and critical thinking environment (Steinert, 2004). Literature from allied health, nursing, and medicine all show consistent findings that excellence in clinical educators, although multifactorial, is characterised by supportive interpersonal relationships, collaborative interaction with students and advanced communication and feedback skills (Hills et al., 2016; Sutkin, Wagner, Harris & Schiffer, 2008). It would appear that the role of faculty, group instructor and faculty, diploma educator, although complementary, require differing degrees of emphases in teaching requisites and abilities.

Feedback is widely recognised as a cornerstone for effective clinical education and learning (Cantillon & Sargeant, 2008). The purpose of feedback is to help learners critically reflect on their actions and stimulate subsequent enhancement of ability and performance. Those providing feedback have criterion against which to evaluate the student's performance and the feedback given reflects both competency as well as the gap between the two parameters (van de Ridder, Stokking, McGaghie & Cate, 2008). Worth noting is that the meaning of feedback and the processes required for effective feedback can differ between students and clinical educators (van de Ridder et al., 2008). Within a given clinical education context, the value of clinical education can be weakened if there exists no clear and agreed upon definition of feedback and the processes around it (van de Ridder et al., 2008). Therefore, the efficacy of an educational and learning process can be increased when both the student and clinical educator explicitly understand the purpose and structure involved in the provision of feedback (Burgess & Mellis, 2015). The current study underlines this. In conjunction with the learning environment, how clinical educators delivered feedback influenced the participant's journey in learning to fully trust the system.

Clinical educators bring to the learning environment particular ways of working, personal beliefs around knowledge acquisition and learning, and this impacts their approaches and expectations to the clinical learning context. Likewise, students also come with their own personal epistemology and expectations regarding clinical education (Burgess & Mellis, 2015). The learner's thoughts, attitudes and willingness to embrace the discomfort that challenging, and critique of their practice brings about, may need to be explored, understood and regarded by providers of postgraduate study and clinical educators (Ernstzen et al., 2010; Petty et al., 2011).

Student reception of feedback needs consideration. The findings in the current study showed that only a small number of participants expressed feeling on-guard, in terms of their openness regarding the process of being observed and critiqued. This related in some cases to participants previous negative experiences during their undergraduate and/or other postgraduate training. However, for other participants, it also came from their antecedent condition of trust in the clinical educator and the clinical educator not fulfilling participants expectations implicit in that trust.

Peer learning is a process by which knowledge and skills are enhanced through collaboration and interaction among status equals. Peer learning holds the potential for exposing learners to multiple views and wider perspectives (Ytreberg & Aars, 2015; Secomb, 2008). Qualitative investigations into clinical education in physiotherapy have reported that having a peer on clinical placement can assist students in achieving desired learning outcomes (Ernstzen et al., 2010). The findings from this study positively support peer collaboration as an adjunct to learning. However, although expansion of practice insight and learning to fully trust the system also came from the capacity to learn from peers, this was not deemed an essential part of the learning journey for most participants. These findings are consistent with previous research in physiotherapy higher education, which has shown that learning and feedback from peers, although valued, is held in lower esteem to learning and feedback from a clinical educator (Burgess & Mellis, 2015).

Beyond the system

“Beyond the system” represents what “learning to fully trust the system” brought to participants, following completion of the MDT diploma programme. Participation became a driver for change and development beyond the mechanical, beyond just being a clinician and beyond the individual.

Mechanical Diagnosis and Therapy is a structured patient assessment, classification, and management system, that provides direction and guidance for clinicians in musculoskeletal practice (McKenzie & May,2003). Many participants expressed that in undertaking the Diploma in MDT they wished to enhance their understanding and application of MDT and become better more expert clinicians. The attributes of physiotherapy practitioners with clinical expertise has been deliberated in the literature, with each specialty area of physiotherapy having different

expectations of expertise (Case, Harrison & Roskell, 2000; Connaughton & Edgar, 2011; Forbes, Mandrusiak, Smith & Russell, 2017; Doody & McAteer, 2002; Jensen et al., 2000; Petty, 2015; Rushton & Lindsay, 2010). Expertise in all areas of physiotherapy, including musculoskeletal practice, is not seen as an acquisition of a static state. Rather, expertise is often thought of as an ongoing, continually evolving process that requires sustained commitment (Petty, 2015). Expertise in musculoskeletal practice has been characterised by, the capacity to learn in and from practice, reflexivity, a critical understanding of practice knowledge and employing a patient centred approach (Petty et al., 2011; Petty, 2015; Rushton & Lindsay, 2010). In this research, participants revealed that through learning to fully trust the system, their practice evolved to include the above attributes.

The capacity to learn from practice and deliver more deliberate patient centred care appeared to develop for participants through their improved understanding of the need to listen to the patient more during the therapeutic exchange. The MDT system has always focused on involving the patient for shared management (McKenzie & May, 2003). Employing a patient centred approach requires the use of communication that allows the patient to tell their story, validates the patient's experiences and fosters mutual collaboration between the clinician and the patient to inform decision making around care (Epstein & Street, 2011). Use of a more patient centred communication approach combined with constant consideration, critique and reassessment of practice, brought about improved diagnosis and management decisions and being a better clinician, for the participants of this study. Doody and McAteer (2002), in their comparative study of novice versus expert musculoskeletal physiotherapists, noted the key aspect that differentiated the two groups was the significant emphasis placed on the history portion of an examination by experts, combined with the use of a dynamic, cyclical process for clinical decision making. Using the patient narrative along with more reflective reassessment processes have been universal findings in terms of the development of musculoskeletal physiotherapy expertise (Constantine & Carpenter, 2012; Perry et al., 2011; Resnik & Jensen, 2003; Rushton & Lindsay, 2010, Stathopoulos & Harrison, 2003).

Historically, expert level practice had been thought to come about through the accumulation of experience over time. The participants of this study had, on average, been physiotherapists for 13.95 years; a considerable period and beyond the proposed 10 years or 10

000 hours of deliberate practice some authors consider necessary to develop expertise (Ericsson, Krampe & Tesch-Romer, 1993). In contrast with such literature, progression towards greater expertise, for this study's participants, did not simply come with time, but from a concerted and purposeful effort to listen to the patient, conscious reflection of their clinical practice and fully trusting the system, to facilitate change in their practice.

Mechanical Diagnosis and Therapy, as a name, implies that consideration of the mechanical elements of a patient's presentation may predominate. Within musculoskeletal physiotherapy, a misconception and common criticism of MDT is that clinical decision making is primarily focused on the movement responses of the patient and adheres to a biomedical model. However, the basis of the MDT system, when applied well, has always been centred round the story, concerns, and needs of the individual patient, not only the response to movement testing (McKenzie & May, 2003). Beyond the mechanical was stressed by participants of this study. They articulated that becoming a better clinician was not just about improving the knowledge and technical aspects of their application of MDT but also progressed beyond movement-based considerations to include higher level skills of synthesis and evaluation.

While MDT seeks to identify any relevant mechanical influences on the patient's presentation, the voices of the participants of this study suggest that the diploma programme has also clearly enhanced their ability and confidence to identify and support patients who require more complex intervention, beyond a movement-based plan of care. They highlighted that their ability to recognise and address the importance of psychosocial factors, in the management of patients, had been significantly advanced. This has not been documented in previous studies. In fact, Petty et al (2011) noted that existing literature, regarding the impact of physiotherapy musculoskeletal postgraduate programmes on clinical development, had shown limited attention to the development of clinical ability in considering the psychosocial element of patient care. Petty subsequently issued a challenge to musculoskeletal postgraduate programmes, advocating they look to ensure greater integration of developing skills and confidence in the assessment and management of psychosocial factors within course curriculum, to bring postgraduate programmes in line with contemporary musculoskeletal practice guidelines (Schmidt, 2016; van der Windt, Hay, Jellema & Main, 2008; Wijma, Wilgen, Meeus & Nijs, 2016). In this respect, the MDT diploma programme aligns with contemporary thinking and evidence. Additionally, the findings further

support the notion that MDT is a system of clinical assessment that is person centred and which incorporates more than the traditional biomedical model into practice. MDT diploma level clinicians are taught to listen to their patient, recognise movement, as well as psychological and social determinants of a patient's presentation and manage all aspects with appropriate education and patient empowerment.

For participants, beyond the system also meant going beyond their prior conceptions of themselves as just clinicians and actualising extension of their scope of practice to expand their professional roles. Although clinical practice still formed a significant part of all participants' current responsibilities, many identified areas of growth beyond that of routine clinical care. For some, growth encompassed the exploration of further academic study and research; others became business owner's, and several realised their ambition to supplement their clinical role by also becoming a recognized physiotherapy educator. Green et al., (2008) retrospective study of the influence of postgraduate musculoskeletal study on physiotherapists professional development, also portrayed a majority of respondents still having a clinical component to their role. Other research noted (Constantine & Carpenter, 2012; Stathopoulos & Harrison, 2003) that following postgraduate study, participants often felt frustrated with the additional demands placed on them in terms of becoming an educator and teaching resource in their work places. In contrast, most of the participants in this study articulated that becoming an educator was a primary driving factor for undertaking the diploma programme and contrary to previous research, the participants of this study fully embraced their improved capacity and opportunities to be involved in physiotherapy education and teaching, post completion.

Gosling (1999) postulated that postgraduate study ought to have value beyond that of professional development and should include broader benefits, including a personal development dimension. Similar to several studies (Conneely 2005; Perry et al., 2011; Petty et al., 2011; Rushton & Lindsay, 2010; Stathopoulos & Harrison, 2003), the findings of this research support Gosling's (1999) view, with most participants articulating and experiencing that intimated personal growth. Enhanced confidence and communication skills, being more open to different perspectives, an improved ability to take on challenges and greater critical awareness, were all areas of growth that translated into the participants' personal lives. Participation in the MDT diploma programme allowed them to expand their potential both in and beyond their professional

role. Some authors, such as Tomlinson (2004) assert that personal growth is the foundation of professional development rather than a by-product. It is not clear from the current study which area of growth may have preceded or followed the other, however it is evident that personal and professional growth, were not mutually exclusive.

Communities of practice are groups of people who share an interest or commitment for something they do (Wenger et al., 2002). Wenger outlined three attributes of a community of practice; community, practice, and domain. That is the relationships and interactions, the professional body of knowledge and skills, and a common purpose or goal. The shared domain of interest engages relationship building and collaborative learning amongst the group to progress knowledge, skills and resources for practice within that shared domain (Wenger et al., 2002). Engagement in the community can extend from full to more peripheral participation and effective communities of practice incorporate varying levels of member participation (Seibert, 2014). As credentialed therapists, the participants in this study had already been exposed to the MDT community of practice, but as the result of achieving diploma level competency, many felt they were more legitimised members; with an improved ability to engage in, participate and contribute to the community. This fits with Wenger's (2002) thoughts that identity within the landscape of a community of practice is a trajectory. That via social mechanisms, more novice members construct and evolve their identities, transitioning towards becoming more seasoned members with advanced knowing, belonging and contribution to the community of practice.

Trust among community members is an essential prerequisite for the development of continued relationships within the community of practice (Seibert, 2014). Completion of the diploma programme brought about greater involvement in the MDT community, contributing to participants fully trusting the system, bringing an outcome that went beyond the individual. When compared with previous literature regarding musculoskeletal physiotherapy postgraduate study, none of the other studies accessed have explicitly identified an outcome where participants identified feeling more involved in a community of practice, as a consequence or impact. Over time, the McKenzie Institute has steered the evolution of its community, establishing a worldwide reach of participants. This established community, along with the international delivery of the diploma programme has likely contributed to this study's unique finding. Nonetheless, while many participants felt more involved, some believed that the McKenzie Institute could provide more

opportunities for continued engagement and learning beyond completion of the diploma programme; a point which will be considered further under implications.

Wenger et al., (2002) also note that communities of practice are not detached entities but can be part of wider communities that interact and may be interconnected. Roberts (2006) suggests that members of communities of practice should seek knowledge building, not only from within one given community but also beyond. The findings from this study are consistent with this concept, with participants' articulation of community of practice not being limited exclusively to the McKenzie Institute. By attaining the Diploma in MDT, participants acknowledged that the potential for movement between communities of practice beyond MDT and the McKenzie Institute had been exposed and realised.

Some participants described a sense of frustration with their existing physiotherapy communities of practice, in that their change and development of practice was underappreciated or underutilised. These feelings echo similar assertions found in the literature, citing that unsupportive work environments and career structures, could contribute to resentment and feelings of devaluation from those that had undertaken postgraduate study (Conneely, 2005; Gosling, 1999; Green et al., 2008; Perry et al., 2011; Petty et al., 2011; Stathopoulos & Harrison, 2003). Recognition of these challenges motivated the current study's participants to seek out environments that aligned more closely with the MDT community of practice ethos. However, most perceived these challenges as short-term, focusing on the potential for opportunities in the future.

Implications

Research can be viewed as formalised curiosity and associated findings may serve to clarify understanding or bring to light further insight or raise new questions. So how do the findings from this research prove useful and what additional thinking has it stimulated? At an individual level it may enhance decision making and experiences of those who may be considering undertaking musculoskeletal postgraduate study; MDT or otherwise. From an organisational standpoint, it may help inform the McKenzie Institute's ongoing development of the diploma programme and other areas for consideration by the organisation. Lastly, findings may serve to

extend the thinking of others who offer and deliver musculoskeletal postgraduate programmes, to question what else might be done or asked within their own contexts.

In terms of the individual, the findings highlight that undertaking the MDT diploma programme initially may require individuals to undergo personal exploration for understanding of motivating factors and whether the programme of study aligns with these motives. Additionally, participants in this study identified there were times of discomfort that challenged and confronted their understanding and performance of their current practice. This brought about periods of cognitive dissonance and potential future participants need to be willing and open to undergoing these processes. The finding of participants expressing more advanced clinical expertise may well help substantiate the McKenzie Institute's anecdotal assertions that the diploma programme will assist MDT trained clinicians in their "reach for clinical excellence" (MII, 2012). The diploma programme is also promoted as "a life-changing journey both professionally and personally" (MII 2012). This claim appears to be validated by the voiced experiences of the participants of this inquiry and could be useful in reassuring potential future students about the value of and outcomes that can be achieved, with successful completion of the MDT diploma programme.

Past research into the influence and value of postgraduate musculoskeletal study on physiotherapist's careers has been isolated to studies within the United Kingdom and the United States (Constantine & Carpenter, 2012; Green et al., 2008; Stathopoulos & Harrison, 2003). The current study included a multinational cohort, accessed through online connections, with participants practicing in different countries and healthcare settings. Within this qualitative investigation of one organisation, providing musculoskeletal postgraduate study, among the nineteen participants interviewed there were similar shared hopes, challenges and opportunities expressed. Going forward, there may be value in exploring cultural differences in how students of such a course of study differ in terms of career development. However, that would entail a different type of research undertaking.

Explicitly knowing the experiences and journey of the participants, may assist the McKenzie Institute to better understand the learning support required to enhance successful completion of all components of the MDT diploma programme. The theoretical component and e-learning platform was considered a challenge for some participants initially, however, those participants who articulated this, recognised it as a part of their learning process and did not feel it impacted

their journey as significantly as the clinical component. The clinical component was considered by all participants to be the most transformative part of learning to fully trust the system but also identified as the most variable parameter. Differences in participants perceived value of and satisfaction with their clinical placement experience was, in most part, due to the difference in clinical learning environments and clinical educators. From the sharing of the participants' stories, there were positive experiences regarding clinical placement and clinical educators. However, less affirming experiences were also exposed. Both these offer some learning's for the McKenzie Institute and might be used productively to assist the McKenzie Institute's education committee in considering and implementing change. Change with the purpose of ensuring that all who are involved in delivery of the MDT diploma programme have the necessary grounding in relational qualities and educational competencies required of a clinical educator, to be successful in extending students more fully. It remains conjecture at this stage, but it is put forth that those involved in facilitating the clinical learning component could benefit from further investment in the guidance and professional development of this aspect of their faculty role from the McKenzie Institute. The need for further support for clinical educators has previously been cited and acknowledged as a determined essential in allied health education (Higgs & McAllister, 2005; McAllister, Higgs & Smith, 2008).

The learner and their expectations were also shown to be possible contributing factors to the varying experiences participants had during their learning to fully trust the system. With this in mind, it is suggested that the McKenzie Institute education committee might wish to consider strategies for establishing transparency regarding the type of relationships needed within the MDT diploma clinical learning environment. The participants in this study acknowledged an antecedent condition of trust in the system, which included trust in the clinical educator. Trust is a two-way construct, as such the student needs to trust the clinical educator in their knowing regarding how they as the learner need to develop and similarly the educator needs to trust that the student is capable of growth. A negotiated contract of expectations as well as operational definitions, especially with regards to feedback, might usefully assist both the clinical educator and diploma students in having greater clarity regarding expectations. If this is established then the clinical educators can consider the relationship as being sufficiently robust, that constructive feedback will be perceived as such.

While this study asked of the experience of MDT diploma graduates, there remains scope for further research into the role of those facilitating the learning experience. Research based on the aspects of the learning environment and clinical education teaching approaches may be valuable in providing a fuller picture regarding the MDT diploma programme, giving the McKenzie Institute further opportunity to consider what else might be done or done differently going forward.

Identified within the participants' voices was that the diploma program provided advancement of practice beyond mechanical considerations and beyond the traditional biomedical model of musculoskeletal care. It encompassed development of their ability to practice more reflectively and with a more patient centred approach which integrated consideration and management of the psychosocial aspects of patient care. Although in contemporary clinical practice there is theoretical support for employing patient centred and biopsychosocial approaches to practice, research demonstrates that musculoskeletal physiotherapists still show a preference for utilising more clinician focused communication (Sanders, Foster, Bishop & Ong, 2013; Synnott et al., 2015). Furthermore, they also still consider the concept of musculoskeletal pain presentations as being more structurally based (Sanders et al., 2013; Synnott et al., 2015). Synnott et al., (2015) put forth that many physiotherapists rely on a biomedical structural diagnosis to direct their patient management and that when non-specific and non-structural diagnosis present, physiotherapists are challenged. MDT uses sub- classification, rather than a specific structural or patho-anatomical diagnosis, to help guide management. It could be speculated that in using this non-pathological/non-structural based approach, MDT diploma clinicians may be more comfortable with embracing the ambiguity and challenges that determinants beyond the mechanical, bring to the management of musculoskeletal presentations. A considered area of research for the McKenzie Institute would be to look further into this conjecture.

The identification of an enhanced sense of belonging to the MDT community of practice was articulated in the findings and affirms the McKenzie Institute's vision of providing worldwide education, training, and support to clinicians in the application of the principles of MDT (MII, 2017). According to Wenger et al., (2002), members of a community of practice at times self-organise, however, they may also require some nurturing and cultivation. Consistent with this, the findings from this study constructively suggest that the McKenzie Institute undergo strategic conversations and seek to put in place conditions and opportunities for continued engagement of diploma

holders, so that, as members, they continue to feel recognised and regarded. Additionally, many participants expressed the desire to move onto faculty within the Institute's structure. There are limited opportunities for this progression and as such the McKenzie Institute may need to identify further ways outside of the traditional faculty pathway, to utilise those with educational aspirations. It is recommended that the McKenzie Institute looks at initiatives which invite, sustain and value diploma graduate involvement in MDT education. In thinking about the value of the community of practice phenomenon in terms of benefits to the individual, the McKenzie Institute might also be advantaged.

In broader terms, findings from this study add to the existing body of evidence that musculoskeletal postgraduate programmes which incorporate the elements as outlined by IFOMPT (both theoretical and clinical components), do appear to contribute to the development of greater clinical expertise, broadening of professional scope and personal development. The findings from this study demonstrate and lend support to previous literature, that musculoskeletal physiotherapists in developing greater clinical expertise, require opportunities for enhanced reflection of practice, with critical dialogue and direct observation from a clinical educator (Constantine & Carpenter, 2012; Perry et al., 2011; Petty et al., 2011; Petty, 2015). Further, the findings also reinforce the merit of clinical placements as an essential education element of musculoskeletal study at postgraduate level. When tailoring postgraduate programmes that look to achieve advancement of expertise and patient care in the musculoskeletal context, education providers, need to ensure that the pedagogy they implement and the learning environments they promote, highlight for students that their previous experiences are valued. Additionally, they need to underscore that students will be required to challenge and question their current practice and that as learners, they will be adequately supported in their exploration and capacity to do this.

Strengths and Limitations

The aim of the current study was to create a detailed description of the experience of physiotherapists undertaking the McKenzie Institute's diploma programme. A shared knowledge of the MDT diploma programme by the researcher and the participants created a situation of insider research. This insider status lends credibility and strength to the study, in that it assisted

in creating an environment in which the participants felt comfortable and trusted telling their stories to a researcher that was willing to consider and share the findings in a respectful way. It was believed that the participants could be honest in their engagement as no power relationship existed between the researcher and themselves. Nevertheless, as qualitative research findings are illuminated by the researcher from data that has been co-constructed with the study's participants, the personal influence of the researcher cannot be fully excluded, and insider researcher status could be considered a possible limitation of this study. Evaluation of qualitative research quality is associated with the concept of trustworthiness (Morrow, 2005). As a situated researcher, I have attempted to mediate for bias and assumptions and maintain trustworthiness of the study by taking a reflexive and critically reflective stance. Additionally, opening the process and findings to the scrutiny of others, including participants, supervisors, colleagues, from within and beyond the musculoskeletal physiotherapy community, seminar presentations and peer discussion, also sought to further enhance this study's trustworthiness.

It is noted that analysis of past literature regarding musculoskeletal postgraduate study has identified barriers to participation. The participants of this study did not focus on difficulties or obstacles to participation. On review of the outlined interview questions, it may be inquiry concerning this was never overtly asked. There is the potential that non-capture of this information may have left important information unrevealed. However, while not formally managed with a structured question, there was nonetheless scope for participants to consider barriers when they were asked "Is there anything else you would like to tell me about your diploma experience?" at the completion of each interview.

A further acknowledged limitation is that the study was carried out with a specific population of MDT diploma graduates and as such is situated in time and place to these participants. As a qualitative study, the findings are not expected to have generalizability, being as they are the stories of particular people at a particular time and within a particular organisation, they may however, be transferable. The findings may prove meaningful or useful to physiotherapists making decisions about pursing musculoskeletal postgraduate education. For future diploma cohorts there could conceivably be benefit in the suggested strategy of an agreed understanding regarding feedback processes. Similarly, for future cohorts, consideration might be given to what is done within the diploma clinical component to facilitate a learning environment where trust and

collaboration is actively enhanced. More broadly, the findings may also prove meaningful or useful to providers or groups involved in developing and delivering similar postgraduate education programmes.

Chipchase, Dalton, Williams and Scutter (2004) stated that education practices within physiotherapy should not be immune from evidence-based scrutiny. Most providers of postgraduate education promote the provision of high quality educational programmes. However, without any research to defend these assertions, there is no basis for such claims. This is the first piece of research to look at the McKenzie Institute's education framework, at any level, and as such provides an additional strength to the current study. In opening up the conversations with those involved in the structuring of learning experiences within the McKenzie Institute, an opportunity is provided to consider further developing the educative processes, to enhance the Institute's teaching endeavours, along with initiating an evidence base for MDT education practices.

Conclusion

The purpose of this qualitative descriptive study was to explore physiotherapists experiences of undertaking a specific course of musculoskeletal postgraduate study, the Diploma in Mechanical Diagnosis and Therapy, offered by the McKenzie Institute. This study offers the first documented investigation that has looked at any MDT education programme or practices.

A key finding from this study was that participants had an established trust in the MDT system and that trust translated into a hope of what undertaking and successfully completing the diploma programme may bring. In learning to fully trust the system, it became evident that acknowledgement of reduced competency occurred for all participants at some point in their learning journey. Additionally, evolution of their practice toward more advanced competency and greater clinical expertise required critical evaluation of their practice. This was most evident and challenging during the clinical component of the diploma programme, learning in and from practice, with guidance from a McKenzie Institute clinical educator. The journey of learning to fully trust the system varied for participants with the most influential moderating factor being the learning environment and trust fostered by the clinical educator.

On completion of the MDT diploma programme and by fully trusting the system, the participants experienced considerable positive outcomes, with their expectations of becoming a more expert MDT clinician being realised, as well as enhancement of both their professional and personal lives. Completion also had the identified potential of exposing the participants to greater involvement in the MDT community of practice and other communities beyond.

In providing an avenue for the voices of those not previously heard, the participants and consumers of MDT education, it is hoped that this study and its findings will instigate thoughts, within the McKenzie Institute organisation, around two constructs 1. How to sustain trust and hope in the system, via the learning continuums education, teaching and learning processes, as well as strategies for enhancing the MDT community of practice. 2. Initiating an evidence base that might support the educational practices of the McKenzie Institute.

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Appendix A: Ethics Approval

AUTEC Secretariat

Auckland University of Technology

D-88, WU406 Level 4 WU Building City Campus

T: +64 9 921 9999 ext. 8316

E: ethics@aut.ac.nz

www.aut.ac.nz/researchethics

26 July 2016

Ailsa Haxell
Faculty of Health and Environmental Sciences

Dear Ailsa

Re Ethics Application: **16/251 Physiotherapists' participation in the McKenzie Institutes musculoskeletal mechanical diagnosis and therapy diploma programme: A qualitative descriptive inquiry.**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 25 July 2019.

As part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through http://www.aut.ac.nz/researchethics. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 25 July 2019;
- A brief report on the status of the project using form EA3, which is available online through http://www.aut.ac.nz/researchethics. This report is to be submitted either when the approval expires on 25 July 2019 or on completion of the project.

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this.

To enable us to provide you with efficient service, please use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.

All the very best with your research,

Kate O'Connor

Executive Secretary

Auckland University of Technology Ethics Committee

Cc: Margaret Campbell, marganddave@hotmail.co.nz

Appendix B: Introduction Letter

Dear MDT Diploma Holder

My name is Margaret Campbell and I am a physiotherapist, and MDT Diploma holder who is currently undertaking postgraduate masters' study through the Auckland University of Technology (AUT) in Auckland, New Zealand. My research is looking at participation in the McKenzie Institute's Diploma Programme.

The Mechanical Diagnosis and Therapy (MDT) sub- classification approach has been widely studied regarding reliability, efficacy and outcomes for patients (Clare, Adams & Maher, 2004; Fairbank et al, 2011; Long, Donelson & Fung, 2004; May & Aina 2012; May, Littlewood & Bishop, 2006; May & Ross, 2009; Werneke et al, 2014). Additionally, inferred from these studies, is elevated reliability, efficacy and clinical expertise in the application of MDT with higher levels of MDT education. To date there has been no exploration into the MDT education programme at any level nor the impact or value to participants in undertaking MDT musculoskeletal postgraduate study.

The aim of my study is to gain the perspective of those who have successfully completed the MDT diploma programme. The findings from this inquiry are intended to:

- illuminate the motivations and expectations for participation in the MDT diploma programme
- provide insight into the experience of undertaking the MDT diploma programme over each component
- identify the effect of participation on clinical and professional development
- identify any opportunities or challenges that have come about as a result of being an MDT diploma holder

In broader terms it is hoped that information gained will enhance the experience of future MDT diploma candidates and additionally inform future development of MDT diploma programme.

This letter invites all MDT diploma holders who completed the programme from 2006 onwards, are physiotherapist and have had 12 months lapse since completion of the diploma programme, to participate in this study.

If you would like to participate, please contact me directly using the details provided below.

As a potential participant you will be provided with an information sheet regarding this study and asked to sign a consent form. Participation will involve a one-hour interview either face to face in a private neutral meeting space or via skype. The identity of all participants involved in the study will remain confidential at all times. All information will be stored on a secure database accessible only by members of the research team (myself and my supervisors) and will be destroyed in a period of six years as per AUT Ethics Committee (AUTEC) requirements.

Your agreement to participate in this study would be greatly appreciated.

Any concerns regarding the nature of this project should in the first instance go to the projects supervisor Dr Ailsa Haxell ailsa.haxell@aut.ac.nz (+64 9) 921 9999 ext 7105. Concerns regarding conduct of the research should address the Executive Secretary AUTEC, Dr Kate O'Connor ethics@aut.ac.nz (+64 9) 921 9999 ext 6038).

Thank you for your time in considering my request. Please do not hesitate to contact either me or the project supervisor if you have any additional queries or wish to know more.

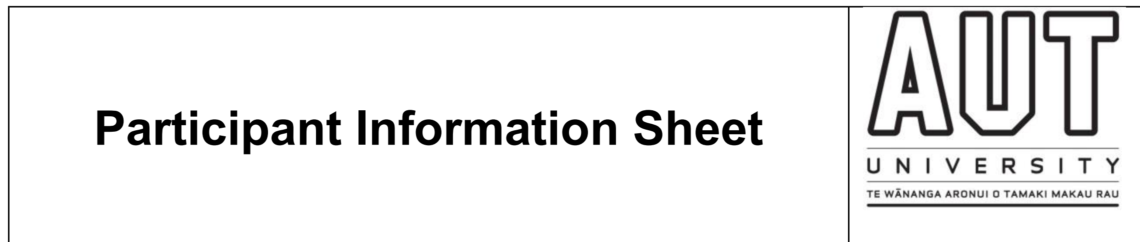
Kind Regards

Margaret Campbell

Principal Researcher: Margaret Campbell email: marganddave@hotmail.co.nz phone (+64 9) 027 9500877

Project Supervisor: Dr Ailsa Haxell email: ailsa.haxell@aut.ac.nz phone: (+64 9) 921 9999 ext 7105

Appendix C: Information Sheet



Date Information Sheet Produced: May 2016

Project Title

Physiotherapists' participation in the McKenzie Institutes musculoskeletal mechanical diagnosis and therapy diploma programme: A qualitative descriptive inquiry.

An Invitation

My name is Margaret Campbell. I am a physiotherapist, an MDT Diploma holder and a probationary member of faculty with the McKenzie Institute's New Zealand branch. I am currently undertaking postgraduate masters' study through the Auckland University of Technology (AUT) in Auckland, New Zealand.

This is an invitation to take part in a research project exploring participation in the Diploma in Mechanical Diagnosis and Therapy (MDT) offered through the McKenzie Institute International. Your involvement in this project is completely voluntary and you may choose to withdraw from participation at any time.

What is the purpose of this research?

The purpose of this research project is to explore from previous participants perspectives firstly, the motivation for undertaking the McKenzie Institute Diploma in MDT, secondly to gain insight into the experience of participation in the diploma programme, thirdly to explore the effect of participation of clinical and professional development and additionally illuminate possible opportunities and challenges presented to participants on completion of the diploma programme.

The report of the findings from this research project will be written up as the thesis for a Masters' Degree in Health Science. It is also hoped that the findings gained from this study will inform future curriculum design, delivery and promotion of the MDT diploma programme. It is further hoped that the findings will be published in a peer reviewed journal related to the fields of physiotherapy, musculoskeletal therapy or health professional education in order to expose a wider audience to the McKenzie Institutes MDT education diploma programme.

How was I identified and why am I being invited to participate in this research?

You have been identified as a potential participant from the McKenzie Institute Internationals register of MDT diploma holders who are physiotherapists. Those who completed the diploma programme prior to 2006 have been excluded as they would not have completed the theoretical component in its current form, the 30-point masters' level paper. Additionally, those who have held the diploma for less than 12 months have also been excluded. Time less than this post- graduation is considered too short a time regarding exploration around opportunities and challenges.

What will happen in this research?

This research project will involve interviews with MDT diploma holders. If you agree to take part, you will be asked to spend one hour being interviewed by a researcher about your experience of undertaking the McKenzie Institute diploma programme. Depending on your personal situation the interviews will be either face to face or via skype. The interviews will be audio-taped and then transcribed into written form.

What are the discomforts and risks? How will these discomforts and risks be alleviated?

Interviews bring with them an element of uncertainty regarding what may be revealed when talking about a personal experience, this may bring about unanticipated feelings that are uncomfortable or distressing for you. At any time during the interview you can choose not to talk about issues that you find distressing or if required you can discontinue the interview or withdraw from the study entirely.

What are the benefits?

For you personally there are no immediate benefits for taking part in this research project. However, as a participant you will be given the opportunity to have a voice and some people find that being interviewed and having a chance to tell their experience can be an enjoyable and/or an interesting undertaking. It will allow for reflection of your experience of completing the diploma in MDT. Information gained may help enhance the experience of future MDT learners. Additionally, the research will expose MDT education at the diploma level to critique and look to inform ongoing development of the MDT diploma programme. In broader terms the study findings may also be of interest to other postgraduate musculoskeletal programme students and educators.

For myself as the researcher the output from this research will go towards me obtaining my Masters' in Health Science.

How will my privacy be protected?

As the method of data collection is interviews your anonymity cannot be guaranteed in that the primary researcher will know who you are. Additionally, because the McKenzie Institute is a connected community made up of relatively small numbers there is the potential that by just telling your story this could lead to the possibility of your identity being known or that you may know other participants. Therefore, to look to maintain confidentiality as much as possible and protect your privacy within this research all administrative, demographic, interview recordings and transcript data will be de-identified by the assignment of a participant identification number. The transcripts of the interviews will be sent to you for checking and the opportunity to amend if you feel your identity is compromised. Additionally, all reports or publications generated in this research project will use a pseudonym and no information will be included that may be utilized to identify you as a participant.

What are the costs of participating in this research?

Your time is the only cost associated with participating in this research project. If you choose to take part, it is anticipated that you will be interviewed for one hour. The researcher will meet you or skype you in a place and/or time that is convenient for you.

What opportunity do I have to consider this invitation?

If you wish to participate in this research project you are asked to contact the principal researcher by 1st November, 2016.

How do I agree to participate in this research?

After expression of interest you will need to complete a consent form to take part in this research project. It will be forwarded to you by the principal researcher.

Will I receive feedback on the results of this research?

A summary of the findings of this research will be accessible to you as a participant if you wish. They will be sent to you at a physical or email address you provide once available.

What do I do if I have concerns about this research?

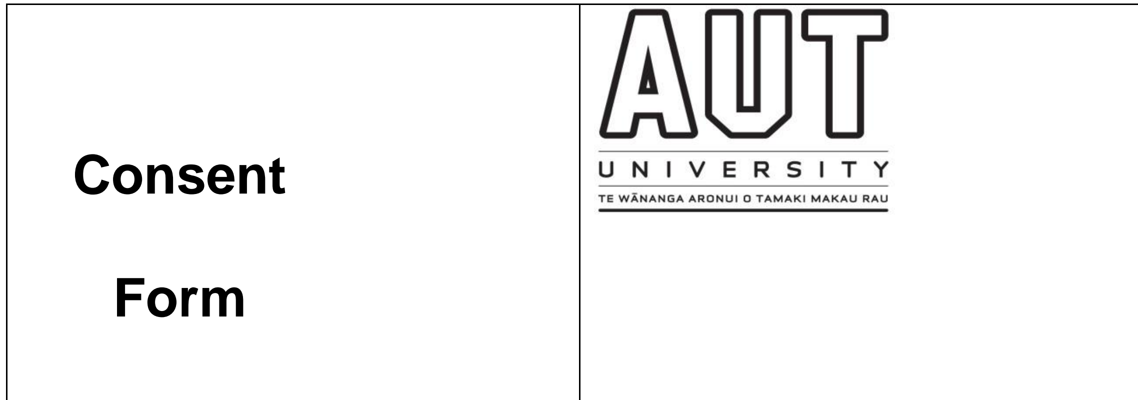
Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Ailsa Haxell, ailsa.haxell@aut.ac.nz (+64) 9 921 9999 ext 7105.
Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Dr Kate O'Connor, *ethics@aut.ac.nz*, (+64) 9 921 9999 ext 6038.

Whom do I contact for further information about this research?

Principal researcher, Margaret Campbell marganddave@hotmail.co.nz

Approved by the Auckland University of Technology Ethics Committee on 26/7/2016, AUTEC Reference number 16/251

Appendix D: Consent Form



Project title: **Physiotherapists' participation in the McKenzie Institutes musculoskeletal mechanical diagnosis and therapy diploma programme: A qualitative descriptive inquiry.**

Project Supervisor: **Ailsa Haxell**

Researcher: **Margaret Campbell**

- I have read and understood the information provided about this research project in the Information Sheet dated May 2016
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- I agree to take part in this research.
- I agree to the use of a pseudonym in any reports generated

- I wish to receive a copy of the findings report from the research (please delete one) Yes/ No
- I wish the copy of the findings report to be (please delete one): Paper / Electronic

Participant Signature :

Participant Name :

Skype Contact :

Approved by the Auckland University of Technology Ethics Committee on 26/7/2016 AUTEC Reference number 16/251

Note: The Participant should retain a copy of this form.

Appendix E: Proposed Interview Questions

Project Title

Physiotherapists' participation in the McKenzie Institutes musculoskeletal mechanical diagnosis and therapy diploma programme: A qualitative descriptive inquiry.

Interviewer:

Interviewee:

Date & Time:

Location:

Demographic Information

Age:

Gender:

MI Branch:

Year since undergraduate qualifying:

Year of Credentialing Exam:

Clinical Residency Site:

Year completed Diploma Programme:

Protocol

My name is Margaret Campbell. I am working on an approved research inquiry as part of my masters' study at Auckland University of Technology looking at physiotherapists' experience of completing the McKenzie Institutes Diploma in Mechanical Diagnosis and Therapy (MDT).

Thank you for your willingness to participate in this research project. Have you read the information sheet provided to you? Do you have any further questions about the project before we commence?

Before we begin the interview, I would like to reassure you that this interview will be confidential, and the tape and transcripts will only be available to my-self and my research supervisors.

Do you voluntarily agree to participate in this interview?

Do you agree to the interview being recorded?

If there is anything you do not want me to record, just let me know and I will turn off the recording device.

Any written or oral report or other material generated from this study will be a representation of the combined data and information from all the participants. Parts of this interview may be made part of the final research report. None of your responses, your name or any identifying characteristics will be included in any reports.

Do you have any further questions I can answer for you before we begin?

May I turn on the recording device?

Interview Questions:

Do I have your verbal consent to proceed with your participation in this interview?

What made you decide or influenced you to progress from credentialed MDT practitioner and commence the MDT diploma programme?

What were your expectations at commencement of the MDT diploma programme?

Can you tell me about your experience of participation in the online distance learning component of the MDT diploma programme?

Can you tell me about your MDT clinical residency experience?

Were there any particular instances you can recall that created dissonance/tension during participation in any component of the MDT diploma programme?

What did you think of the final examination assessment process?

What has been the experience of bringing MDT diploma level skill to your clinical practise?

Has completing the MDT diploma programme influenced your professional development?

Has completing the MDT diploma programme influenced any other areas of your life?

Have there been any challenges or opportunities present themselves following completing of the MDT diploma programme?

Is there anything else you would like to tell me about your diploma experience?

Appendix F: Summary of Participant Demographic Data

Participant	Age	Gender	Year of Graduation	Credentialed MDT	Diploma MDT	Clinical Site
1	48	Male	1998	2008	2013	USA (Austin)
2	52	Female	1989	2009	2012	Scotland
3	39	Female	2000	2003	2010	Holland/Scotland
4	33	Male	2008	2011	2015	USA (Austin)
5	37	Female	2002	2012	2015	USA (Austin)
6	50	Male	1991	1996	2012	Scotland
7	32	Male	2006	2013	2015	USA (Austin)
8	50	Female	1987	2006	2009	New Zealand
9	43	Female	1994	2006	2009	Scotland
10	42	Male	1998	2008	2014	USA (Austin)
11	39	Female	1999	2003	2011	Holland/ USA (New Jersey)
12	40	Female	2002	2006	2009	Holland
13	40	Female	2000	2010	2014	USA (Austin)
14	41	Male	1997	2011	2013	Australia
15	41	Female	1997	2006	2011	USA (New Jersey)
16	42	Male	1995	2008	2013	Australia
17	34	Male	2006	2010	2012	USA (Austin)
18	42	Female	1998	2006	2015	Belgium/Holland
19	48	Female	1998	2004	2009	USA (Austin)

Appendix G: Mind-map Theme One